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USSR Report

AGRICULTURE

No. 1233

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MAJOR CROP PROGRESS AND WEATHER REPORTING

REPORT ON WINTER CROP STATUS AROUND USSR

Moscow SEL'SKAYA ZHIZN' in Russian 7 Mar 80 p 2

[Article presenting materials prepared by the scientific workers of VASKhNIL [All-Union Lenin Academy of Agricultural Sciences], zonal scientific-research institutions and specialists of the main administration of grain crops and of the main administration on general farming questions in the USSR Ministry of Agriculture: "Winter Fields"]

[Text] Winter crops play a large role in the grain balance of our country. They provide about one-third of the entire yield of grain. The goals of farmers include utilizing all potential possibilities of the winter fields and securing the largest harvest and gross yields of grain in every kolkhoz and sovkhoz.

Last fall winter crops were in better condition than the year before by the time the snow came. Their overwintering is coming to a close successfully almost everywhere. Now the fate of the harvest will depend greatly on the timeliness and quality of crop care.

Especially important is early spring top-dressing, primarily utilizing nitrogen fertilizers. This agricultural method also increases plants' resistance to diseases and it must be utilized as an important means of obtaining a large yield. Top-dressing should be differentiated by schedule and rate of fertilizer application according to the conditions of the crops and the characteristics of the variety. The most important condition is the application of fertilizer into moist soil and its uniform distribution in the field.

In order to raise the quality of winter wheat grain it is effective to apply nitrogen fertilizers, and in particular a solution of carbamide (synthetic urea) at a rate of 30-45 kilograms of active matter per hectare. The best time is the phase of ear formation to the beginning of the phase of milky ripeness.

TUR preparation should be utilized in places where the frequent lodging of winter crops is observed. It is usually used to treat crops of tall-stalk varieties that have been planted after the best predecessors, that have received good doses of organic and mineral fertilizers and in all cases that have been provided proper conditions for the intensive growth of the vegetative mass. The optimal period is from the end of tillering to the beginiing of the booting stage, when the height of the plant is 15-25 centimeters. The best dose is 4 kilograms of active matter per hectare.

If necessary enterprises can sow additional winter crops or resow fields. Resowing should occur only when the yield of winter crops is expected to be lower than that of spring grains.

The utilization of agrotechnical methods must be based on the requirements of winter crops under specific soil-climactic conditions.

The Ukraine and Moldavia

In the steppe rayons of the Ukraine the reserves of soil moisture are limited and for this reason in order to cultivate a large harvest the most important methods will be those that secure the maximum accumulation of moisture and its preservation and productive use during the vegetative period. Also, in some fields, especially after non-fallow predecessors, the processes of nitrification were slowed and plants began to turn yellow in the fall because of the shortage of nitrogen in the soil. These crops should be top-dressed first. The most effective time to top-dress the crops with fertilizer is as early as possible while the soil still contains sufficient moisture. In this case the nutrients that are dissolved in the water penetrate into the bottom layers and the root system of the plant can utilize them more completely.

When there are sufficient moisture reserves and frequent spring rains the best results are achieved by a top-dressing with nitrogen fertilizers mixed with other mineral fertilizers. In tests conducted by the Scientific-Research Institute of Farming and Livestock Farming of the Western Rayons of the UkSSR through the use of this method there was an increase in yield averaging 5.4 quintals per hectare over an average of 3 years. Moreover, the protein content in the grain increased by 1-1.3 percent and that of gluten--by 3.4-5 percent. On fields where mineral fertilizers were not applied earlier top-dressing should be done using complete mineral fertilizers at an application rate of 20-30 kilograms of nitrogen, phosphorus and potassium per hectare. The effectiveness of an agricultural method will be significantly higher if the nutrients are applied directly to the region of the root system with the aid of disc sowers.

It is important to think about the timely and quality harrowing of crops. If the time for this is past and a crust with cracks have formed over the surface of the soil, harrowers cannot be taken out into the fields.

On some fields winter crops become infected with grain carabide. In early spring, therefore, it is necessary to treat them with a 16-percent emulsion of gamma-isomerhexachloran (3 kilograms per hectare), or a 50-percent emulsion of metation (1.5 kilograms per hectare). In the fight against the chinch bug good results will be achieved by spraying with Trichlorfon and methyl parathion or metation. To combat brown rust a three-time treatment of plants is recommended using an 8-percent suspension of cinebe at a rate of 50 liters of active liquid per hectare. The first spraying takes place when the rust is developing and when no more than one-tenth of crops are infected with it. If the schedules for treatment with urea and cinebe coincide, the operations are unified.

It is important to locate sparse crops that will be subject to resowing or supplementary sowing with spring crops. In the steppe zone the best crop for resowing is corn. But barley and millet can produce very satisfactory yields if there are good moisture supplies in the soil and if the spring is a rainy one. If crops are uniformly sparse but the plants have bushed out to three shoots and more it is best not to resow them, but to top-dress them as a priority operation.

In the forest-steppe zone under favorable moisture conditions and the availability of a sufficient quantity of nutrients in the soil, with 180-200 plants per square meter, in most cases winter crops should not be resown. If crops are less dense and if the spring is late and dry, locational resowing should be utilized, particularly using barley. Corn for grain is put out in fields where sugar beets and winter crops will not follow wheat. In the Poles'ye it is best to resow winter crops with barley or oats.

The depth of pre-sowing cultivation of soil should be no less than 7-8 centimeters, which can be achieved by using KPE-3.8 and KPG-4 cultivators. Under conditions of rapidly increasing temperatures and a rapid drying-out of the soil resowing should be completed by SZS-2.1 sowers without preliminary cultivation. It is better to equip agricultural machinery and equipment with broad units with caterpillar tractors which do less harm to crops that tractors with wheels.

The Northern Caucasus

In the Northern Caucasus the overwintering of crops passed satisfactorily. It should be kept in mind that as a result of the drought during the first half of the summer the fall precipitation could not fully compensate for the shortage of moisture in the soil. The soil was dried out to a significant depth. For this reason measures must be taken here for the maximal accumulation of moisture during spring precipitation.

Crops that did not receive a sufficient quantity of fertilizer during initial cultivation should be top-dressed first and the dose should be increased by 20-30 percent. Nitrogen fertilizers are applied on the basis of moisture and nitrogen supplies in the soil. Under this year's conditions the application norms should not exceed 60-80 kilograms per hectare in the northern and eastern zones and 80-100 kilograms in the southern zones. If phosphorus fertilizers were not used in the fall it is essential to conduct radical top-dressing with nitrogen-phosphorus fertilizers at a rate of 40-60 kilograms of active matter per hectare on carbonate chernozem if crops are of normal density and well-developed.

For well-developed winter wheat and winter barley crops when there is a shortage of moisture in the soil top-dressing using nitrogen fertilizers should be conducted at a rate not exceeding 40 kilograms of active matter per hectare.

In order to increase the gluten content in grain under dry conditions late nitrogen top-dressing should occur during the period from the middle of the booting stage until blooming; and in moist rayons--from 2 weeks after the start of the booting stage until the beginning of milky ripeness. The dose is 30-60 kilograms of nitrogen per hectare.

On fields with a crop stand of 150-200 per square meter or even up to 250 if they are weak and not bushy, there should be a supplementary sowing of spring barley as soon as it is possible to move out into the fields. The sowing rate should be based on placing no more than 500 plants on 1 square meter. Seed spacing should not be made dense because this can decrease productivity.

In order to form a large harvest, 2-2.5 quintals of complete mineral fertilizers per hectare are applied during the supplementary sowing. If the seed cannot be placed at a depth of 4-6 centimeters it is better to conduct a surface soil cultivation and to resow winter crops with spring grain crops.

Chemical weeding is performed during the phase of tillering to the beginning of the booting stage. Poorly-developed and sparse winter crops with supplementary spring barley are treated with herbicides when they become stronger and of normal bushiness. Fields that are infested with bedstraw and buckwheat morning glories are sprayed with preparation 2M-4X PP (1.5-2.5 kilograms of active matter per hectare). It is expedient to use 2.4-D herbicide and liquid nitrogen fertilizers simultaneously.

Recently root rot, rust diseases and septoria spot diseases have become widespread in the Northern Caucasus. There has been an increase in the quantity of mouselike rodents. In connection with this, after the soil dries each enterprise must determine their location and organize their elimination. At the first signs of brown rust, the threat of which is growing today, crops must be treated three times with cinebe plus urea. Potassium extract is recommended as a prophylactic means. It is also important to combat the leaf beetle, ground beetles and the larvae of the grain beetle.

Central and Lower Povolzh'ye

The winter-hardiness of winter crops was somewhat poorer than usual. For this reason agronomists here are obliged to make an especially careful analysis of the condition of crops and to organize crop care according to the specific conditions of each field. If resowing is required in some places, primarily millet, spring wheat and barley should be utilized. All fields of well-developed winter crops must be harrowed in one or two steps as soon as the soil is ready regardless of the size of crop damage.

If the plants were not fertilized in the fall, nitrogen fertilizer should first be used for poorly-bushing shoots that are optimally dense. When the soil is ready, radical top-dressing is performed. For crops that became bushy in the fall this is more expedient than early-spring surface top-dressing. The rate of nitrogen fertilizer per hectare is differentiated according to the predecessor: on clean fallow--20-30 kilograms of active matter; on occupied fallow--40-60 kilograms; in the remainder of cases---60-90 kilograms. In order to improve the quality of the grain it is expedient to perform top-dressing operations again during earing or at the beginning of grain formation in winter wheat.

Sometimes winter crops form a large surface mass and lodge, especially in the chernozem zone on clean fallow and in the forest-steppe on fertilized occupied fallow too. As has already been noted, in combatting the lodging of wheat TUR preparation should be utilized; for rye--campozan.

Central Chernozem Zone

Here the condition of the crops is generally significantly better than in recent years. Over 90 percent of them are in good or satisfactory condition. An ice core is very dangerous. To remove the ice from the surface of fields 3-5 tons of humus and 1-3 quintals of potassium salt are distributed per hectare.

Nitrogen top-dressing must take place on the entire area. The norms for fertilizer application must be established for each field according to the availability of nutrients in the soil and to the predecessors. The winter crops that should be top-dressed with nitrogen fertilizer first are those that were given superphosphate as the initial fertilizer in the fall or those found in fields that have an increased phosphorus content according to the data of agrochemical cartograms.

Top-dressing is conducted immediately after the snow leaves the fields. This avoids the washing away of mineral fertilizers with water from thawing snow. When the upper layer of soil is dry it is expedient to move to a local method of fertilizer application using grain-mineral fertilizer sowers with a placement of seed to a depth of 4-6 centimeters. To improve the quality of the grain it is expedient to plan for combining the non-radical top-dressing of winter wheat during the phase of ear-formation using a 20-percent solution of urea at a rate of 30 kilograms of nitrogen with the application of poisonous chemicals to combat pests, and beetles in particular.

We also cannot forget the skilful, differentiated harrowing of winter crops that have remained. This can encourage a significant increase in yield. It is true that poorly developed crops that did not become bushy in the fall should not be harrowed. When possible they should be cultivated with rotary hoes.

If overwintering has been unfavorable, if a square meter has 200-250 stalks of wheat or 150 of rye and there is an early spring, crops should not be resown because they can provide a relatively good harvest. If spring vegetation is more than 5 days late, poorly-developed, sparse winter crops should be resown with spring grain crops.

The Non-Chernozem Region of the RSFSR

In this zone overwintering is proceeding normally and all crops are reliably covered with snow. If winter crops are sparse or ruined the under-production of yield can be brought to a minimum through the timely and quality "repair" or resowing of barley. The sowing rate of seeds for barley supplementary to wheat is 80 percent of the accepted rate.

If density is less than 100 plants per square meter the area is resown with spring grain crops. An exception is uniformly sparse or spottily dead rye. Supplementary sowing on the total area is not effective because the barley is almost completely overwhelmed. It is better to replow the land mass or to selectively cultivate in areas where the rye is dead, with the subsequent planting of barley here only.

The first top-dressing is made to coincide with the beginning of the revitalization of the plant; the second--with the maturation of the soil with the application of fertilizer to a depth of 3-5 centimeters with the aid of grain-mineral fertilizer sowers. First 30-40 kilograms of active matter in nitrogen fertilizer is applied per hectare, followed by the remainder.

Belorussia and the Baltic States

In sowing winter rye after clover, feed lupine and other pulse crops and their mixtures as well as after grains with the application of organic fertilizers the optimal dose of nitrogen for top-dressing is 60-70 kilograms of active matter per hectare; and after grains without organic fertilizers--70-90 kilograms. Two-thirds of the mineral fertilizers can be applied in early spring and one third during the phase of beginning ear formation. This type of distribution and the growth of yield noticeably raises the protein content in grain. The fractional application of fertilizer on light soils is especially important.

A mandatory device in cultivating winter crops is the harrowing of crops. Timely and quality harrowing secures a growth in productivity. When plants are protruding harrowing should not be done because the teeth of the harrow pull them out and damage them. In such cases packing is recommended, including using heavy water-carrying rollers for peat-swamp soils.

In order to increase the resistance of winter rye to lodging and the effectiveness of nitrogen fertilizers crops are cultivated with campozan at the beginning of the booting stage.

The Urals and Siberia

In this zone the winter crops that were sown at the optimal time are now in good condition. Crops have bushed out normally, forming 3-5 stalks. On fields where sowing was late poor development has been noted and plants began their overwintering in the phase of 1-3 leaves. Agronomists have been called upon to specifically determine the condition of each such land section and measures for their care.

In a number of oblasts the washing out of active forms of nitrogen was noted last fall. This means that mineral top-dressing is mandatory, firstly on unfertilized fields, in doses of 1-2 quintals of ammonium nitrite per hectare. On fields where plants are well-developed it is also necessary to plan for the application of nitrogen-phosphorus fertilizers. Phosphorus fertilizers will have to applied by means of the radical method when the soil is ready.

A creative approch by specialists to the care of winter crops while considering their condition, characteristics of the variety as well as the conditions of soil moisture and nutrition will become the foundation for the successful fulfillment of plans for grain production.

8228
CSO: 1824

MAJOR CROP PROGRESS AND WEATHER REPORTING

CROP WORK PROGRESS THROUGHOUT USSR

Moscow SEL'SKAYA ZHIZN' in Russian 19 Mar 80 p 1

[Article by N. Osychkin, agronomist: "Which Seed Has Been Prepared for Sowing?"]

[Text] Each day the sun shines more brightly and spring is becoming more and more apparent. In the southern rayons of the country enterprises have already begun field operations. Soon it will be time for the mass sowing of spring crops. Farmers have expressed their decisiveness to complete sowing in an organized manner and in the best agrotechnical time, and to lay a firm foundation for the harvest of the final year of the five-year plan.

One of the most important conditions for the stable growth of agricultural production output is the sowing of all agricultural crops using high quality seeds of the first and second classes. In conjunction with the intensive application of other factors that determine the fertility of fields, this can significantly increase productivity. Thus, in the Osnezhitskiy Kolkhoz of Belorussia 45-50 quintals of grain per hectare are produced annually. There are also large yields of potatoes and feed crops. An important role in this is played by high-quality farming, the extensive utilization of fertilizers and the fact that all plowland is sown only with first-class seed. Even now selected seed is being stored in storehouses. Agronomists check its quality over and over and they organize the timely treatment of seed with protecting and stimulating preparations.

At the present time most of the country's kolkhozes and sovkhozes have the necessary quantity of seed for spring. Emergency funds exist. The basic task of farm directors, specialists, subdivisions of USSR Sortsemprom [Association of the high-quality seed industry], and of procurement organs consists of cleaning, drying and treating seed with protective agents by the start of sowing operations so that each kilogram would be of the very highest sowing quality. Almost all of the seeds of grain and pulse crops are in the conditioned category in the Ukraine, Belorussia, Kazakhstan and Moldavia. Success was furthered by the precise work of specialized brigades and links and by the efficient utilization of all grain-cleaning and drying technical means.

Interesting experience in seed farming has been amassed in Kirgiziya. Here this branch has received independent development and is being placed on an industrial base. In the republic specialized seed-farming enterprises with the required seed-processing technology have been allocated. They supply commodity enterprises with seed from regionalized highly-productive varieties. As a result there is a growth in the productivity and stability of agricultural production output. According to the data of laboratory analyses, in Kirgiziya almost all of the seed for grain and pulse crops is in condition now and 98 percent of them are included in first and second class for sowing quality.

Unfortunately, such concern for the golden fund of the harvest is not in evidence everywhere. In the enterprises of Latviya 33 percent of the seed was not prepared for sowing. The situation with the seed fund is serious in a number of oblasts and autonomous republics of the Non-Chernozem Region. Whereas on the average in the country, according to the data from the USSR Central Statistical Administration, 9 percent of grain and pulse crop seed is not up to standards, in this zone 26 percent is not. A significant portion of seed reserves are still not conditioned in Vologodskaya, Pskovskaya, Smolenskaya and Kirovskaya oblasts. Perm enterprises did not prepare half of their seed for sowing. Some directors of kolkhozes and sovkhozes and some specialists have stopped working with seeds in storehouses in anticipation of warm days. But spring conditions can become more difficult and then there simply will not be enough time to clean, dry and treat seed. This means that this important matter cannot be put off. It is essential to do everything possible to make sure that each hectare of spring fields is sown with conditioned seeds of good quality.

At the present time it is possible to raise the classification of seeds. For example, in Stavropol'skiy Kray and Voronezhskaya and Penzenskaya oblasts over four-fifths of the seed reserves belong to the first class of the sowing standard. But in large grain-growing regions such as Kurganskaya and Omskaya oblasts only 14-18 percent are first-class. Only one-third of all seed supplies of grain and pusle crops are first class in the enterprises of Bashkiriya and Ul'yanovskaya Oblast.

In preparing seed special attention must be given to new, highly productive varieties. In Siberia these are Omskaya-9 strong wheat and Almaz hard wheat; in the Povolzh'ye--Saratovskaya-46 and Krasnokutka-6. Promising varieties of barley, oats, peas, rice and cotton are appearing in the fields. All of them must be brought up to the highest levels of quality in order to secure a significant growth in yield.

This year for the first time it is planned to utilize industrial technology on 2.4 million hectares for cultivating corn, sunflowers, soy, sugar beets, and vegetables. Success will depend greatly on the quality of seed resources. It is essential to more quickly complete the calibration and unloading of seed for seed users and to achieve the complete preservation of seed and its sowing according to the recommended technology.

In a number of places there is an acute shortage of buckwheat, millet, flax and grass seeds. Their quality is far below standard. In Orlovskaya Oblast, for example, 66 percent of the buckwheat is not conditioned. But after all here the millet field is one of the largest in the RSFSR, and the soil must receive good grain. It is important to accelerate inter-enterprise and interoblast seed exchanges and obtaining seed from state reserves when necessary. Seed freight is now the most urgent.

"All sowing material is first class," is the slogan which must be used now while beginning competition for the model preparation of all seed for spring sowing.

5748
CSO: 1824

COOL WEATHER DELAYS SPRING FIELD WORK IN KIRGIZIYA

Moscow PRAVDA in Russian 5 Apr 80 p 1

[Article by V. Shirokov, PRAVDA correspondent, Kirgizskaya SSR]

[Excerpts] Sowing started today in the republic with a delay. It is as if this delay, caused by the cold weather, is urging the people onward. Time is being watched strictly.

The example of the forerunners assures us that a yield of 50 quintals of grain is presently accessible to many of the farms in Kirgiziya--if, of course, agrotechnical requirements are strictly observed. Unfortunately, deadlines for performing field operations and technical discipline are being met in very few places. For example, winter-crop dressing went very slowly in Kirovskiy Rayon. Here and there plowing of fallow fields is being delayed. The lag in preparation of an interfarm irrigation network and hydraulic engineering structures was also significant. Only a third of the overhead irrigation machinery was repaired on time in Issyk-Kul'skaya Oblast. Early spring irrigation has been started with a delay. Only 8.3 percent of the areas had been moistened by the middle of March, whereas they had not yet started this activity at all in Keminskiy Rayon.

A mass inspection of farms of Chuyskaya and Talasskaya valleys for preparedness for sowing, conducted by the republic's People's Control Units, showed that there was no concern for the preparation and storing of agricultural equipment on a number of kolkhozes. Thus on the kolkhoz "Put' k kommunizmu" Kalininskay Rayon, there were many unrepaired tractors and a good half of the plows and seeders required repeated repair. Many such shortcomings were found on the kolkhozes "Pobeda" and "imeni Krupskaya" in the same rayon.

The republic's grain farmers have now planned to bring the gross grain harvest to 1,500,000 tons, the plan being 1,400,000 tons. The commitments are high. To satisfy themselves successfully, it is necessary to get the planting done on time, for spring lays the foundation for the harvest.

9194
CSO: 1824

MAJOR CROP PROGRESS AND WEATHER REPORTING

MILD WEATHER MARKS EARLY APRIL IN AGRICULTURAL REGIONS

LD251419 Moscow SEL'SKAYA ZHIZN' in Russian 16 Apr 80 p 1

[Report by agrometeorologist O. Pisarenko: "The Weather and the Crops"]

[Text] Mild weather persisted over the USSR's European territory in the first half of the 10-day period. Then (6-8 April) it became cooler in most regions. Night air temperatures during this period varied from minus 1 to minus 9 degrees and from minus 10 to minus 18 degrees in the Komi ASSR, the greater part of the Volga-Vyatka and Urals regions and individual regions of the Central Volga District. The minimum air temperature was above zero in the North Caucasus, Central Krymskaya Oblast and extreme south of the Volga region.

Rain fell everywhere. The heaviest rainfall (31-60mm) was in the southeast of Moldavia and individual regions of Odesskaya, Khersonskaya, Zaporozhskaya and Voroshilovgradskaya oblasts, in Krasnodarskiy Kray, West Stavropolskiy Kray and the greater part of Volgogradskaya Oblast.

In the majority of oblasts of the northwest region (except Pskovskaya Oblast), the Central, Volga-Vyatka and Urals regions (except Orenburgskaya Oblast) and the north of the Volga region, the winter grain crops and sown cereal and leguminous grasses were under snow. The depth of the snow cover north of the Petrozavodsk-Vologda-Kostroma-Gorkiy-Izhevsk line was 30-55mm or more.

Over the greater part of Krymskaya Oblast, in the south of Krasnodarskiy Kray, and in places in Stavropolskiy Kray the winter grain crops had reached the stem extension stage. In south Moldavia, in Zakarpatskaya Oblast, the south of Odesskaya, Nikolayevskaya and Khersonskaya oblasts and Zaporozhskaya and Rostovskaya oblasts, the north of Krasnodarskiy Kray and Stavropolskiy Kray, the winter crops are tillering and vegetation has regenerated on the sown cereal and leguminous grasses. On the remaining territory of the Ukraine and the south of Volgogradskaya Oblast, on certain days when the air temperature rose to 8-12 degrees, winter grain crops resumed vegetation.

The rise in daytime temperatures caused activation of growth processes in fruit crops in the central Chernozem and Nonchernozem zones of the RSFSR and in the Baltic republics. In Moldavia, the southern oblasts of the Ukraine and the North Caucasus buds swelled on apple, pear, plum and sweet and sour cherry trees. Sap is still rising and in places buds are swelling and opening on the vines.

The milk weather persisted in the Transcaucasus republics. The air temperature was 2-5 degrees above the annual average. Over the larger part of Armenia and Azerbaijan there was little precipitation, but in Georgia it was heavy (15-35mm and in places up to 90mm). In these regions the weather was favorable to the growth and development of winter grain crops. Buds are opening and the first leaves are developing on fruit trees. Apricot trees are blossoming.

In the farming regions of West Siberia and the north and northeast of Kazakhstan the weather grew colder at the beginning of the 10 days and cold weather persisted almost throughout the period. It grew milder only at the end of the 10 days. The winter grain crops and grasses here were in a state of winter dormancy, under snow cover mostly 15-30cm deep. There was no snow cover, or its depth was less than 50m, in Altayskiy Kray and the south of Omskaya, Novosibirskaya and Kemerovskaya oblasts. The temperature at winter crop tillering node depth was mostly minus 6-12 degrees. Winter conditions were satisfactory.

Very mild, rainy weather persisted in the central Asian republics. The line beyond which apricot trees are blossoming moved to the southern oblasts of Kazakhstan. The first leaves are continuing to develop on mulberry trees and vines.

CSO: 1824

MAJOR CROP PROGRESS AND WEATHER REPORTING

REPORT ON MID-APRIL WEATHER, CROPS

LD021519 Moscow SEL'SKAYA ZHIZN' in Russian 24 Apr 80 p 1

[Report by agrometeorologist O. Pisarenko under the rubric "The USSR Hydrometeorological Center Reports": "Weather and Crops"]

[Text] The weather was warm in the European territory of the USSR at the start of the April 11-20 period. This was followed by a fall in temperatures. Warm weather returned to most areas at the end of the period.

Precipitation occurred everywhere. It was greatest (31-60mm) in the northern and eastern half of Saratovskaya Oblast, in a number of rayons in the Central Volga region, in the Kabardino-Balkarskaya ASSR, the Severo-Osetinskaya ASSR and in parts of Krasnodarskiy and Stavropolskiy krays.

In most southern oblasts of the Ukraine, in Moldavia, over most of the North Caucasus and in the south of Volgogradskaya Oblast winter grain crops were at the tillering stage, while in the south of Odesskaya, Khersonskaya and Zaporozhskaya oblasts and in some fields in Moldavia and in Lvovskaya and Khmelnitskaya oblasts winter wheat had reached the stem extension stage. In Krymskaya oblast and in the south of Krasnodarskiy and Stavropolskiy krays stem growth continued on winter crops. In the Baltic republics, Belorussia, the Central Chernozem region, parts of the southern oblasts of the central region, the northern oblasts of the Ukraine, the northern part of Volgogradskaya Oblast and in Saratovskaya and Kuybyshevskaya oblasts winter grain crops vegetated feebly.

In the southwest of the Baltic republics and in the western oblasts of the Ukraine and Belorussia, where average air temperatures during the period were 5-7 degrees, fruit and berry crops developed actively. In all these areas the buds on apple, pear, plum and cherry trees swelled. In Krasnodarskiy and Stavropolskiy krays, the autonomous republics in the North Caucasus, and in Moldavia and the southern oblasts of the Ukraine the first leaves on fruit crops are still opening, while in the south of Krymskaya Oblast the apricot trees are in bloom.

Mass field work was carried out in Moldavia, the south and southeast of the Ukraine and in the North Caucasus and the lower Volga region under good or satisfactory weather conditions.

In farming areas of West Siberia and in western and northern oblasts of Kazakhstan the weather was unusually warm, with daytime air temperatures reaching 11-15-20 degrees and more. Precipitation was heaviest in the southern rayons of Omskaya Oblast, the western rayons of Tyumenskaya and Kurganskaya oblasts and the northwestern oblasts of Kazakhstan (15-25mm).

In these areas winter rye resumed vegetation at near-normal times. Grasses and clovers began sprouting. The grasses which had resumed vegetation and winter crop sowings had wintered satisfactorily.

In the central Asian republics and souther oblasts of Kazakhstan the weather remained warm. Daytime air temperatures rose to 30-38 degrees. At the end of the period it grew colder in these areas. There were frosts in the valleys of Kirgizia. In southern oblasts of Kazakhstan and in the northern rayons of the central Asian republics minimum air temperatures were 1-4 degrees, while in the southern rayons they were 7-12 degrees.

Rainfall was heaviest (11-30mm, in places 35-40mm) in the Talas and Chu valleys, in Tashkentskaya, Bukharskaya, Syrdarinskaya, Dzhizakskaya and Zamarkandskaya oblasts, the south of Chimkentskaya Oblast, in Dzhanbulskaya and Alma-Atinskaya oblasts, and in Tadzhikistan. Precipitation was negligible over the remainder of the territory.

In these areas the warm weather was conducive to the rapid germination of cottonseed and appearance of cotton shoots in fields with sufficiently high moisture levels. In the southern rayons of Surkhandarinskaya and Kurgen-Tyubinskaya oblasts the first true leaf appeared on cotton plants. Conditions for the growth of the plants were good, although they deteriorated slightly at the end of the period owing to a drop in temperatures.

In the central Asian republics ovaries have formed on fruit crops. The development of the first leaves continues on grapevines and in places inflorescences have appeared. In Chimkentskaya Oblast apply, pear and plum trees have begun to blossom; in Alma-Atinskaya and Taldy-Kurganskaya oblasts fruit crops and grapevines are coming into bud and developing their fruit leaves almost a week earlier than seasonal averages.

In southern Turkmenia and Tadzhikistan winter wheat is in flower, while it is still at the stem growth stage over the rest of the territory.

Alfalfa has formed a good stand, reaching a height of 40-55cm, and in places 60-70cm. In Maryyskaya Oblast inflorescences are still forming. In Kirgizia the height of alfalfa varies from 10-15 to 30cm.

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CORN SEED WATER-PROOFED FOR PLANTING WHEN COLD

Minsk SEL'SKAYA GAZETA in Russian 2 Apr 80 p 1

[Article by Belorussian Telegraph Agency Correspondent: "They Made Friends With the Corn"]

[Text] Not awaiting the usual soil warmup, the farms of Grodnenskaya Oblast can now begin corn planting. Water-proofed seeds will be used to this end for the first time. Their preparation, i.e., their treatment with a special solution which forms a film to protect them from pests and pathogens is applied at two interregional centers. It has been planned to water-proof as much seed as is necessary to plant an area of 15-16,000 hectares before the start of field operations. Such seeds can lay in the unwarmed soil until the onset of warmth and they guarantee a substantial addition to the harvest.

Almost 25,000 hectares of the most fertile soil (twice as much as last year) is presently allocated for corn in Grodno Province. Since autumn, most of the fields have been fertilized with full quantities of organic and mineral fertilizers in order to increase the harvest of green mass for silage. It has been planned to use mainly early and medium ripening varieties and to employ a wide-row planting method following the experience of the "Rodina" kolkhoz in Ostrovetskiy Rayon which last year produced 485 quintals of corn mass per hectare on the average. Mixed planting will also be practiced, along with planting of this crop by itself.

The specialized units will insure complete mechanization of the operations for its cultivation and harvest.

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RESOLUTIONS ON SPRING PLANTING IN BELORUSSIA REPORTED

Minsk SEL'SKAYA GAZETA in Russian 6 Apr 80 p 1

[Article: "On Certain Questions of the Spring Planting: In the Central Committee of the Communist Party of Belorussia and the BSSR Council of Ministers"]

[Text] The Central Committee of the Communist Party of Belorussia and the BSSR Council of Ministers note that significant work has been done by the Party, Soviet and Agricultural bodies, kolkhozes and sovkhozes of the republic in preparing supplies, equipment and personnel for the spring planting. All of the kolkhozes and sovkhozes have been supplied with high-quality spring grain-crop seed. More organic fertilizer than last year has been readied and transported to the fields, and acid soils have been limed. Equipment repair is practically completed. Everywhere training of team workers, equipment operators, sowers and other workers for mastery of advanced methods for producing high-yield harvests has been carried out.

At the same time, the overall level of organizational-operational and political-education work at the kolkhozes and sovkhozes in connection with the imminent spring planting still does not correspond to those responsible tasks and increased requirements which are stemming from the high socialist pledges which have been made and the peculiarities of this year's spring.

In an adopted decree, the Central Committee of the Communist Party of Belorussia, and the BSSR Council of Ministers obliged the BSSR Ministry of Agriculture, the BSSR State Committee of the Agricultural Equipment Association, the BSSR Ministry of Procurement, Belsel'khozkhimiya, the BSSR State Committee for Provision of Petroleum Products, the obkoms, gorkoms, and raykoms of the Communist Party of Belorussia, the obliispolkoms and rayispolkoms, the primary party organizations, and the managers of farms to make timely inspections of winter grain-crop sowing, to carry out the necessary measures for tending them and to replant with spring grain crops sections which are too thin or which have died out.

It is necessary to carry out spring planting of all crops in optimum periods of time and at the high agrotechnical level which guarantees the satisfaction of socialist commitments to the state for the production and sale of grain as well as buckwheat, flax fibre, vegetables, potatoes, sugar beets and other plant growing products.

Taking the lateness of spring and the possible negligible rainfall in April into account, it is necessary to take active measures for highly efficient use of all of the technological and labor resources during application of organic and mineral fertilizers and the comprehensive working of the soil with maximum use of multiple machinery units so that spring grain crops may be planted by the earliest time limits, not more than 5-6 calendar days; flax, sugar beets and feed root crops in 3-4 days and potato planting in 8-10 days.

This year the obkoms, gorkoms and raykoms of the Communist Party of Belorussia, the oblispolkoms and rayispolkoms, the BSSR Ministry of Agriculture, the BSSR State Committee of the Agricultural Equipment Association and their offices in the oblasts, the party organizations and kolkhoz and sovkolkhoz managers should insure an incomparably higher level of agricultural management at all stages in the struggle for the harvest. To this end, they must fundamentally and comprehensively consider the lessons and the conclusions from work in previous years and bring all of the factors insuring the production of the planned yield and gross harvest of grain and other crops into play to the full extent in the concluding year of the five-year plan.

On the basis of the experience of the equipment operators from Ipatovskiy Rayon, Stavropol'skiy Kray and a number of rayons in the Republic, the BSSR Ministry of Agriculture, the BSSR State Committee of the Agricultural Equipment Association, the obkoms, gorkoms and raykoms of the Communist Party of Belorussia, the oblispolkoms and rayispolkoms should insure the recruitment of mechanized units in teams from each kolkhoz and sovkhoz and organize their flow-type team operation. It is everywhere necessary to specify 24-hour equipment maintenance for all of the soil-working and sowing units by specialized mobile brigades and teams from BSSR State Committee of the Agricultural Equipment Association and of the kolkhozes and sovkhozes. They must also provide for the organization of fuel supply as well as medical care for the equipment operators right in the field.

It is proposed that the BSSR State Committee for Provision of Petroleum Products, the BSSR State Committee of the Agricultural Equipment Association, the BSSR Ministry of Agriculture, the BSSR Ministry of Land Improvement and Water Resources, Glavpoles'yevodstroy [Main Administration for Water Resources Construction in the Poles'ye Region] and the oblispolkoms and their bodies in the provinces take exhaustive measures to increase the delivery of fuel and libricants to the kolkhozes and sovkhozes and to create reserves of petroleum products on each farm in quantities insuring continuous operation of the farm machinery and tractor fleet.

It is necessary to institute strictest control over consumption of fuel and lubricants on the kolkhozes, sovkhozes and other agricultural enterprises and the observance of regulations for transportation and storage of petroleum products on farms and refuelling of machinery; over consumption of fuel and lubricants should not be permitted.

It has been recommended that the BSSR Ministry of Agriculture, the BSSR State Committee of the Agricultural Equipment Association, the obkoms, gorkoms and raykoms of the Communist Party of Belorussia, the oblispolkoms and rayispolkoms solve the question of recruiting the necessary number of supplementary equipment operators from industrial enterprises and organizations in other sectors of the national economy in accordance with the decree of the CPSU Central Committee and the USSR Council of Ministers of 10 January 1980 (Point 11 of the Decree of the BSSR Council of Ministers of 28 January 1980). It is necessary to determine the measures of moral and material incentive for the indicated equipment operators at spring planting and to insure the timely solution of all the questions of their everyday life and work on the kolkhozes and sovkhozes.

The obkoms, gorkoms and raykoms of the Communist Party of Belorussia and the primary party organizations are obligated to concentrate the practical activity of the agitation and propaganda cadres and the active membership and the news for mass information on broad-based propaganda, convincing explanation and bringing the requirements and the problems ariving from the decree of the CPSU Central Committee and the USSR Council of Minister's Decree "On the Supplementary Measures for Preparing for and Performing Spring Field Operations in 1980" and the decisions of the 20th Plenum of the Central Committee of the Communist Party of Belorussia to the deep consciousness of each participant in the spring planting.

It is necessary everywhere to organize a daily summing up of the socialist competition of the farms, brigades, teams and crews of the planting equipment and the individual equipment operators in the fields and to insure the systematic and operational interpretation of the course of the competition and the dissemination of progressive work devices and methods and of the best experience of labor organization.

Along with the material stimulation of the labor of the grain farmers, it is necessary to adopt actively diverse forms of moral incentives for the leading workers, to make a theoretical evaluation of shortcomings and oversights and to react sharply and without delay to facts of mismanagement, lack of discipline and poor organization.

The editors of the republic, oblast, association and rayon newspapers and the BSSR State Committee for Television and Radio Broadcasting have been commissioned to broadly cover the work of party, soviet, and agricultural offices in carrying out spring planting, to disclose the experience of the foremost workers and innovators of the planting season in a qualified way and to support creative initiative and business-like proposals and starts energetically. The editors of the newspapers ZVYAZDA, SOVETSKAYA BELORUSSIYA, SEL'SKAYA GAZETA, CHYRVONAYA ZMENA, ZNAMYA YUNOSTI and the oblast newspapers, as well as television and radio, have been commissioned to create visiting groups of journalists as well as information headquarters and press centers in each region to provide broad publicity of the competition and to carry out surprise inspections of the quality of spring field operations and the practical use of the recommendations of science and foremost experience.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

INSTRUCTIONS, ADVICE ON SPRING FIELD WORK IN LITHUANIA

Vil'nyus SOVETSKAYA LITVA in Russian 5 Apr 80 p 1

[Interview with Doctor of Agricultural Sciences Antanas Tindzhyulis, Lithuanian Agricultural Institute by correspondent I. Bagdanskis: "Spring Is Calling to the Fields"]

> [Text] With the increase in temperatures, the snow is melting rapidly everywhere. In many places large areas of tilth and winter crops are already free from it. What is the main thing now, to what phases of work should the managers and farm specialists dispatch people these days? Ionas Bagdanskis, Lithuanian Telegraph Agency correspondent, about this with a department head of the Lithuanian Agricultural Institute, Antanas Tindzhyulis, doctor of agricultural sciences.

[Question] Last fall, many winter crops were sown. What is their status now?

[Answer] "Finally a year has come," said Antanas Tindzhyulis, "when we may again count on a good winter crop harvest, since the seeds passed the winter well everywhere. However, with the intense snow melting, water is collecting in low places in winter crop and perennial grass fields. If it remains there longer, we will lose a part of the harvest; the winter crops and clover in these places will get soaked and they will be thinned out or will die. Then, the large areas of dead crops will have to be resown. Therefore, it is necessary to send people to the fields, not delaying even one day, to drain the water. This must also be done on the tilth so that the fields which have been prepared for spring planting might dry out uniformly."

[Question] Spring application of fertilizers has a great effect on the harvest of all crops. How is this work organized?

[Answer] First of all, it is necessary to check the mineral fertilizer at storehouses. On certain farms a part of the fertilizer is stored in barns, in sheds and in other unsuitable places. There is a danger that they may be flooded by waters from melted snow. Fertilizers which have gotten wet lose a part of the nutritive substances necessary to the plants. If it is pressed into lumps, it is necessary to waste time breaking it up, and if poorly granulated fertilizers are applied to the soil, a smaller harvest will be produced.

Since the soil did not freeze deeply and the meteorologists are promising a warm and sunny April, it may be that the spring flood waters will already have receded in a week and the winter crop vegetation will be renewed early. It is now the case that in a day or two it will be necessary to start giving them nitrogen supplements. Ammonium nitrate and urea are best suited for this, and where the perennial grasses and pasture lands remained unfertilized with phosphorus and potassium since autumn, it is immediately necessary to perform this crop dressing. Just as soon as the grass is sprouted in the cultivated meadows, it will be urgently necessary to supply a nitrogen top dressing to the areas intended for the first pasturing. Naturally, it is difficult to go out into the fields with ordinary equipment now. Therefore, it is necessary to use all the capabilities of agricultural aviation.

It is very important to use organic fertilizers better. In the spring, manure should be applied only where corn is going to be growing and, so as not to be late with potato planting, one should deliver manure only to lighter soil areas which have been allocated for them. In the fields allocated to sugar beets and other root crops, it is not worthwhile to bring out the manure but apparently we will not succeed in bringing it out. Therefore, it will be necessary to deliver more of it to occupied fallow fields and clover fields where winter crops will be planted in the fall.

[Question] Planting schedules have already been set up on the farms. To what should particular attention be paid when carrying out the programs for the first stage of operations?

[Answer] In the time remaining until the start of planting, it is necessary to test the equipment and eliminate all of the malfunctions. This year's conditions require this since spring is so late in coming. The sowers and equipment for applying ammonium hydroxide must be particularly carefully prepared. To my way of thinking, it is very important co conjoin the basic and the auxiliary operations. For example, if it is planned to sow 100 hectares in a day, it is necessary to concern oneself not only with the working of the soil, the equipment for applying fertilizer and planting, and the allotment of people. It is also necessary to deliver the necessary amount of seeds and granulated super phosphates to the field on time and to dispatch a tractor there with which it will be possible to cultivate the berms and other places which are accessible to wide-span equipment only with difficulty. No matter how well these plans are drawn up, you will have to correct them to take into consideration weather conditions.

Spring planting time always depends on the state of the soil. The harvest will be poorer if one cultivates waterlogged soil. It is also reduced when dry soil is cultivated. Therefore, the agronomists should follow its status very carefully. However, as soon as it is possible to begin planting, one must not delay this work even a minute. Planting must be performed rapidly and in a high quality fashion.

I want to turn our attention to the fact that the weather conditions for recent years have caused considerable confusion in crop rotations, and therefore we should now firmly know not only what and where we are going to plant in the spring, but also how large of an area will be planted in a winter crop in the fall. It is necessary to choose the predecessors of individual crops correctly and bring their alternation and crop rotations to order.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

PLANTING SCHEDULE CUT BACK IN GOMEL'

Minsk SEL'SKAYA GAZETA in Russian 3 Apr 80 p 1

[Article by Belorussian Telegraph Agency correspondent: "Planting Following a Reduced Schedule"]

[Text] The protracted winter forced rural workers in Gomel'skaya Oblast to reexamine the schedules for carrying out spring planting which had been formulated earlier. A course has been set for the sharp reduction of work deadlines as a result of the use of wide-span equipment. About 360 chains of 3 sowers each will be brought out onto the fields for the first time. Almost two and a half times as many wide-span units for "T-150" and "K-700" tractors and multiple attachments for levelling soil have been readied as last year, and twice as many units for applying ammonium hydroxide. Much has been done toward mechanization of operations guaranteeing the planting. Sower and potato planter loaders will be widely used on all farms. Adjustment of the agriculture machinery is being completed. The equipment operators who are faced with working with the wide-span units have undergone special training.

It has been planned to carry out planting of the early grain crops in the oblast in 5-6 working days.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

SOWING DELAYED, FIELD PREPARATIONS UNDERWAY AROUND STAVROPOL

Moscow IZVESTIYA in Russian 4 Apr 80 p 1

[Article by V. Oliyanchuyk, IZVESTIYA correspondent, Stavropol'skiy Kray]

[Excerpts] Nikolay Timofeyevich Vil'gotskiy, first secretary of Kochubeyevskiy Rayon, considers that complexes which are being organized on all of the rayon's farms are developing as the Ipatovtsy recommended. The harvesting-transport complex designed for all field-crop operations, but only for the cultivation of any one crop which is labor intensive and extremely important for the farm, has been made permanent.

The workers of the Kochubeyevskiy Rayon are performing field operations in an organized manner; early cereal crop planting has been finished everywhere, and beet growers and corn growers will bring their sowing equipment into the fields any time now. Meanwhile, the farms in the remaining rayons around Stavropol have begun work later than usual because of the extended winter and the extreme cold spells which held on literally until the last days of March. This compelled all of the farmers to work the fields and carry out seeding at faster speeds.

Spring field operations are gathering force in the center, in the north, and the east of the Kray. The Stavropol'tsy have assuredly begun the task for Harvest-80, the harvest for the concluding year of the five-year plan.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

BRIEFS

SPRING WORK IN TRANSCARPATHIA--In Transcarpathia this spring warm sunny days have alternated with rainy ones. The land has already warmed up. On some stretches the soil has become ready--the grain growers are hurrying in order to not miss the optimum sowing dates. The spring field work front is expanding with every day. [Excerpts] [Kiev SIL'S'KI VISTI in Ukrainian 5 Apr 80 p 1]

SPRING WORK IN CRIMEA--Grain growers in Crimea are working under adverse weather conditions this year. And in spite of this field work is going forth all across the peninsula. They are utilizing every hour of fair weather to prepare the soil for row crops and at the same time sow spring crops. From Tarkhankut to Kerch the steppe is coming alive. [Excerpts] [Kiev SIL'S'KI VISTI in Ukrainian 18 Apr 80 p 1]

LATE SPRING IN UKRAINE--The late, capricious spring is forcing the grain growers to make significant adjustments in the work plan. The object is to make highly effective use of each hour of fair weather, to do their sowing within the optimum sowing dates. [Excerpts] [Kiev SIL'S'KI VISTI in Ukrainian 27 Apr 80 p 1]

PLANTING BY AIR--Brest--At the same time that they are top dressing the winter crops and grasses, the oblast's aviators have begun to spread phosphorus-potassium fertilizers over the dried out peat bogs allocated for winter grain crops. It has been planned to plant barley and oats by air following the experience of past years over the large area of such land where it is difficult for equipment to move in the spring. The collective of the Brestskiy aviation enterprise is presently working more than 300,000 hectares of field, meadows and pasture lands--much more than last year. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 11 Apr 80 p 1]
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SPRING FIELD WORK--In Transcarpathia this spring warm sunny days have alternated with rainy ones. The land has already warmed up. On some stretches the soil has become ready--the grain growers are hurrying in order to not miss the optimum sowing dates. The spring field work front is expanding with every day. [Excerpts] [Kiev SIL'S'KI VISTI in Ukrainian 5 Apr 80 p 1]

CORN PLANTING--Tashkent, 27 March (Tass)--The warm March sun has dried the irrigated fields in Tashkentskaya Oblast, and today the machine operators brought sowing equipment out into them. This year corn growing will be a particularly wide development here. This is associated with the commitments of the livestock breeders in the oblast to increase production of meat, milk and other products sharply. The oblast's farmers decided to increase production of the "amber grain" this year to 146,000 tons; this is almost 50,000 tons more than last year. Such a large increase in production will be achieved by developing unproductive land and by increasing the yield from each hectare. [Text] [Moscow TRUD in Russian 28 Mar 1] 9194

FERTILIZER APPLICATION--Minsk--The organic fertilizers for the spring crops on the kolkhozes and sovkhozes of Belorussia have been prepared a month ahead of schedule. More than 50 million tons of compost (about 90 percent) has already been transported to the fields. The abundant dressing (20 tons of organic matter per hectare) will permit us to produce up to 32 quintals of grain from it. The experience of the foremost kolkhozes, which harvested 40 quintals of grain per hectare last year in spite of a drought is being used. [Text] [Moscow TRUD in Russian 16 Mar 80 p 1] 9194

CSO: 1824

LIVESTOCK FEED PROCUREMENT

UKRAINIAN LIVESTOCK FEED EFFORTS NOTED

[Editorial Report] In Kiev SIL'S'KI VISTI in Ukrainian 24 Apr 80 p 2, an article by V. Kalyta reports on the work of the Ukrainian Scientific Research Institute of Irrigated Crop Farming. The article reports that workers at the institute got 1,606 quintals of green mass per hectare, which contained 243.5 quintals of feed units and 29.3 quintals of digestible protein.

A 500 word article on 4 Apr 80 p 2 by M. Korobko and N. Dovhan' appearing in early April turns its attention to ferment additives for livestock rations. The article begins by making the point that nearly 30 percent of the nutrient matter in feed is not assimilated by the livestock. This is explained first and foremost by the incomplete digestion thereof. Ferment preparations are recommended to stimulate digestion.

"In specificity of effect they are identical with grass ferments, however, they break down plant proteins better, contain a complex of materials which break down cellulose and other complex hydro carbons in plant feeds. These ferments are not synthesized by the animal."

The remainder of the article is devoted to the production and preservation of ferment preparations.

A short article on 23 Mar 80 p 2 by S. Tsan'ko in late March praises those farms in Poltavskaya Oblast which made the most of the means on hand in the livestock feed program. Those farms which had no feed shops or feed kitchens in which to steam and mix straw with various components turned to the use of 10 cubic meter cisterns. The article reports that expenditures for the new equipment were minimal, the benefit there from was great and livestock productivity went up, in spite of the feed shortage.

An article on 10 Apr 80 p 2 from Poltavskaya Oblast expands the scope considerably. The 1,400 word article by M. Kolyada and S. Tsan'ko reports from a local VASKhNIL conference on livestock feed. A significant part of the article is devoted to Poltavskaya Oblast's efforts to improve its feed situation through land reclamation efforts and expansion of hectarage devoted to various feed crops.

Meadows and pastures in the oblast supply only 14 percent of the feed although they could and should do significantly more."

Also worth noting are remarks by the director of the Scientific Research Institute of Crop Farming and Animal Husbandry for the Western Regions of the Ukraine, corresponding member of VASKhNIL, Doctor F. Yu. Palfiy.

"The lack of coarse and succulent feeds on the farms is one of the reasons for low livestock productivity and the over expenditure of grain forage. Each enterprise should strive to see that they get as much high protein feed per hectare as possible."

CSO: 1811

LIVESTOCK FEED PROCUREMENT

INSPECTION TEAM REVIEWS FEED PROGRAM DURING WINTER PERIOD IN THE UKRAINE

Kiev PRAVDA UKRAINY in Russian 27 Feb 80 p 2

[Article by members of PRAVDA UKRAINY inspection team: "Experience Evaluated By Repetition"]

> [Text] The cattle wintering period moved into its second half. And this, as is well known, is the most difficult period for the livestock farms. Today a zealous master, in addition to protecting each kilogram of feed, also ponders the best means for multiplying the return from it. And here the skilful use of leading experience, literally each and every grain of it, is of great assistance to the livestock breeders. Moreover, it should be noted that in those areas where a thrifty attitude prevails in carrying out this work, experience is introduced into operations without delay. An example of this is the fact that the Kiev livestock breeders are successfully employing the barothermal method for processing straw, although it was only recently that it was introduced into the republic. This new innovation is also being used in the Crimea and in Nizhnegorskiy Rayon.
>
> Unfortunately, we are unable to boast about the existence in all areas of such an attitude towards leading experience. Here is what those who participated in our regular inspection of livestock wintering operations had to say.

Did They Forget What They Knew?

An oblast seminar on the raising of heifers was held at the Zaporozhets' Kolkhoz in Orekhovskiy Rayon of Zaporozhskaya Oblast. It can be stated at once that there was definitely something to display and something to learn here. The oblast's livestock breeders returned from Orekhovskiy Rayon with notebooks full of useful entries. A large amount of the Orekhovskiy Rayon experience is already being employed on a number of farms.

One could only rejoice, despite the fact that his mood would deteriorate upon greater acquaintance with the "fly in the ointment." During this same seminar, emphasis was placed upon the fact that concentrated feeds must be fed to animals in the form of mash. As is well known, the technology for preparing mash is simple. Nor does anyone question the importance attached to the correct preparation of the feed. Nevertheless, at this same farm where the seminar was conducted -- the Zaporozhets' Kolkhoz -- the concentrates were fed to calves in dry form.

"Forgetful" people are also working at the Za Mir Kolkhoz in Sinel'nikovskiy Rayon in Denpropetrovskaya Oblast. This farm -- a spetskhoz [specialized farm] for the raising of heifers -- in 1978 became one of the winners of a republic competition for livestock breeders. At the present time, the kolkhoz workers appear to recall the recent past and are envious of themselves. Actually, they sold full-weight heifers at that time and the livestock breeders could not be praised enough: each first heifer, even during the first year, furnished more than 3,000 kilograms of milk.

But the very next year after the farm was awarded a prize, it began to fall behind. The weight gains decreased by almost twofold. As a result, the animals were held over for three and then finally for four months.

What was the reason for this? Let us try to understand this problem "from the beginning." A simple example. To maintain the schedules for feed consumption during the wintering period in a firm manner -- this is truly one of the rudiments of farm production. This was also done formerly at the Za Mir Kolkhoz. Today these schedules are being observed only in the form of a "half-way measure."

The winter this year has been cold and this has also adversely affected the weight increases. However, the difficulties are being successfully overcome on the leading farms. However, at the Za Mir Kolkhoz, no solution has as yet been found for the problem of installing heat generators, in keeping with the example set at other farms. Yes and even straw bedding is lacking in the facilities. Nevertheless, it is here that the future dairy herd is to be developed.

"The principal cause of the low weight increases is a shortage of feed" explained N.I. Zuzik, the kolkhoz chairman, who only recently assumed the position.

Alas, the mentioned facts are quite clear: and yet feed is not the only problem.

Our inspection teams commented upon the fact that all too often references are being made today to feed shortages. All problems are being explained on the basis of a "difficult year." Such was the opinion expressed at the Yelenovskiy Sovkhoz in Mar'inskiy Rayon in Donetskaya Oblast. Here the average daily weight increases in the young stock did not exceed 280 grams.

What was the problem? Was there no feed for the livestock? Nothing of the sort -- at the Oktyabr' Kolkhoz in this same rayon, the same amount of feed was available per head of livestock. The only difference was that each gram of feed was employed in a profitable manner on the Oktyabr' farms, owing to the fact that here -- in the delivery department, the veterinary dispensary for calves and in the facilities having group machines -- ideal conditions had been created for raising healthy and productive animals. It bears mentioning that Mar'inskiy Rayon is one of the oblast's leading rayons for animal husbandry and especially for milk production. Last year, 2,900 kilograms of output were obtained from each cow here and, at the present time, more than 7 kilograms of milk daily. These results derive mainly from the work performed by the livestock breeders at the Oktyabr' Kolkhoz.

Thus, with the same amount of feed available, the Oktyabr' Kolkhoz is presently obtaining weight increases which are almost twice as great as those being obtained at the Yelenovskiy Sovkhoz. As the saying goes, the causes of this situation are clearly visible to the untrained eye. At the Yelenovskiy Sovkhoz, proper thought was not given on a timely basis to the arrangements required for the replacement young stock. Generally speaking, there is no delivery department. No exercise is provided for the animals. During ordinary years, all failings are somehow concealed and weight gains raised "to the norm" -- an additional wagon of hay, an extra box of mash. But the situation is different today. Each problem is now apparent.

Moreover, There Were Seminars...

It is obvious that considerable losses are occurring at this same Za Mir Kolkhoz in Dnepropetrovskiy Rayon, during this month of February, owing to the fact that they are proceeding all too slowly and failing to convert over to a system of loose maintenance for its heifers. Yet a seminar was conducted on this subject more than a year ago in the oblast. The livestock breeders from the Kolkhoz imeni Lenin in Krinichanskiy Rayon provided a very convincing demonstration of the advantages to be realized from this method. The method is generally well known. We will mention only that the animals are distributed by groups according to their age and weight characteristics. This makes it possible to mechanize the feed distribution process to a maximum degree (a feed preparation shop with a capability of 120 tons daily is in operation at the Kolkhoz imeni Lenin). The problems concerned with cleaning and heating the facilities are solved much more easily. Many farms throughout the oblast are employing this valuable experience. But the Za Mir Kolkhoz is proceeding in a very slow manner.

Unfortunately, this example is by no means singular in nature. Let us look at Zaporozhskaya Oblast. Concern is displayed here for disseminating leading experience. Last year alone, five oblast and 18 rayon seminars were conducted for the livestock breeders. Approximately 5,000 individuals participated in them. And it should be stated that many of them acquired liberal amounts of useful experience.

The chief of a heifer raising complex at the Kolkhoz imeni Vatutin in Vasil'yevskiy Rayon, Ye. V. Gladkovskaya, stated in a not too confident manner:

"At the Ukraina Kolkhoz in Primorskiy Rayon, we liked the pasture areas and at the Zaporozhets' Kolkhoz in Orekhovskiy Rayon -- the manner in which the competition was organized. We are gradually introducing these same developments..."

Such lack of confidence on the part of a specialist is understandable when one reviews the operational results of the complex. During January and February the weight increase per head of cattle amounted to 316 grams daily. Truly, this is nothing to boast about. And once again -- the cause is not simply a matter of insufficient feed supply.

The calves at the complex feel the cold weather -- the concrete floors are not suitable for our winters. In some buildings, boards have been spread out on the concrete (following the example set in Primorskiy Rayon). In these areas the cattle weight increases are higher -- by 100-120 grams. But nothing has been done with regard to the remaining facilities. Considering the present level of farm mechanization, the personnel must be trained in advance and in a thorough manner. A worker at the complex must master the equipment to perfection. But at the Kolkhoz imeni Vatutin, they began training the machine operators only after the complex's building had been placed in operation. And the result was immediately apparent. It was impossible to see, without difficulty, the tremendous frozen "cake" of mixed feed -- it formed around the storehouse, because the workers here were not skilled in the operation of the new mechanisms. It came as no surprise to learn that 2,900 head of cattle at the complex of the Kolkhoz imeni Vatutin, representing all age groups, lag behind in their growth by roughly 30 kilograms.

No Two Feeds Are Alike

Very stern measures should be applied against those who ignore the valuable experience that has accumulated in the field of feed enrichment. The leading farms are aware of the importance of such work: by enriching the rations with protein additives and microelements, it is possible to raise the productivity of the cattle considerably.

The Podol'ye Sugar Plant is located in Ternopol'skaya Oblast. A shop for enriching molasses with carbamide has been operating successfully here for some time. The collective at the plant does not view the preparation of nutritional feed as an excessive burden. They consider it to be a vital task.

The chief technologist for the plant, G.K. Levandovskaya, participated in our discussion. The enrichment shop is one of her principal concerns.

"This is a very important sector" related the specialist, "I do not believe there is any need to explain in detail the benefits which our farms realize from urea. They are familiar to all livestock breeders. Yet all too often a watchful and guarded attitude is adopted with regard to this reserve. By adding carbamide to the molasses, under laboratory control and with plant accuracy, we centralize the feed enrichment process. This also helps to avoid unpleasant eventualities.

In Ternopol'skaya Oblast, this work has been organized, as the saying goes, in grand style. Several years ago the Ternopol'skaya Oblast Executive Committee adopted a special resolution calling for the creation of special molasses processing shops at each of the eight sugar plants -- so as to ensure the issuing of only an enriched form of molasses to the farms. This was a correct decision.

Nevertheless, as the members of the inspection team themselves learned, such valuable experience is still not being employed in all areas in Ternopol'skaya Oblast. For example, the oblast's most powerful sugar plant -- at Chortkov (Director V.A. Selitbovskiy) -- has already been in operation for three seasons. However, it still does not have any enrichment shops.

And Vinnitskaya Oblast, is this the sugar equivalent of our Donets Coal Basin? It would seem that surely here the more experienced sugar refiners and livestock breeders would be the first to embrace new and leading ideas. Who would have thought it possible -- no thought has as yet been given to creating a molasses enrichment shop here.

In Khmel'nitskaya Oblast, our inspection team decided also to visit an "old" source of experience. An important and interesting seminar was at one time conducted here at the Kolkhoz imeni Sverdlov in Krasilovskiy Rayon. The specialists, machine operators and skilled craftsmen at this farm, using available equipment, created two technological lines. One was for the preparation of a nutritious mixture, seasoned with nutrient yeasts, for cows which had already delivered calves. The other technological line was for the preparation of coarse feeds for feeding to the animals, with carbamide and microelements added.

A special laboratory was at the same time created at the farm, in the interest of ensuring that all work was carried out on a scientifically accurate basis.

How is the work proceeding at the present time, considering the fact that there is considerably less coarse and succulent feed and the situation is very difficult with regard to concentrates?

Our inspection team -- is once again at a farm of the Kolkhoz imeni Sverdlov.

"Yes" admitted the head of the farm, O.V. Petrikovskaya, and the chief zootechnician, M.Ye. Kozubey, "It is useful work -- the adding of carbamide and microelements. More output was obtained when they were employed.

One of the kolkhoz's veterinary orderlies, V.I. Boguslavskiy, joined in the discussion.

"What did you say? Today nobody is interested in enriching feed. I went to the Krasilovskiy Rayon veterinary pharmacy in order to obtain microelements and I was informed that none were available and that it was not known when they would be available at the Khmel'nitskaya Oblast Veterinary Technical Supply Office.

Considering all that was accomplished, all that remained was to moisten the syrup -- one half kilogram per cow daily. But this was so little!

True, they gave a demonstration on the operation of the feed preparation shop mechanisms before the inspection team -- in order to show that all is not lost. We would like to believe that this is so. At the present time, the livestock breeders and machine operators at the Kolkhoz imeni Sverdlov must devote a maximum amount of effort if they are to make up for lost time. And this is not easy: the milk yield being obtained from each cow at the kolkhoz is short by 1 kilogram daily.

Unfortunately, the experience accumulated by the Sverdlov workers is not being repeated by any other farm in Krasilovskiy Rayon. And only a few throughout the oblast are following it. This constitutes a direct rebuff to the oblast, rayon and agricultural organs.

> The members of the inspection team of PRAVDA UKRAINY were as follows: S. Petrushko -- chief zootechnician-technologist for beef production of the oblsel'khozupravleniye; A. Smirnov -- chief zootechnician at the Zbarazh Interfarm Enterprise for Beef Production -- Ternopol'skaya Oblast; A. Lysenko -- chief zootechnician for the Mar'inskiy Rayon Agricultural Administration; G. Zhuravka -- head of the Agricultural Department for the newspaper RADYANS'KA DONECHCHINA -- Donetskaya Oblast; V. Pikhzlenko -- secretary of the party committee at the Kolkhoz imeni Lenin in Krinichanskiy Rayon; I. Polegen'kiy -- chief of the Sinel'nikovskiy Rayon Agricultural Administration -- Dnepropetrovskaya Oblast; N. Boyko -- calfmaid at the Zaporozhets' Kolkhoz in Orekhovskiy Rayon; V. Kuznetsov -- chief zootechnician at the Vasil'yevskiy Rayon Agricultural Administration -- Zaporozhskaya Oblast; M. Rybchinskaya -- member of People's Control Group at the Kommunar Kolkhoz in Khmel'nitskiy Rayon -- Khmel'nitskaya Oblast; N. Ladanovskiy, V. Lysenko, A. Pankratov, A. Rekubratskiy, M. Fedik -- correspondents of PRAVDA UKRAINY.

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LIVESTOCK FEED PROCUREMENT

ENRICHMENT OF LIVESTOCK FEED RATIONS IN THE UKRAINE

Moscow PRAVDA in Russian 10 Mar 80 p 2

[Article by A. Okopnyy, Deputy Minister of Agriculture for the Ukrainian SSR: "Enriching the Ration"]

> [Text] During the November (1979) Plenum of the CPSU Central Committee, it was pointed out that one of the causes of slow growth in the production of animal husbandry products is the lack of balance in the feed in terms of protein. Other components are required here. In solving this very important problem, associated as it is with the return being realized from the farms, a great amount of reliance must be placed upon the chemical industry and upon the proper utilization of the achievements of science and practical experience.

The wintering period has always been a difficult one for livestock breeders and this present one has not been an exception. As a result of the summer drought, a number of farms in the Ukraine laid away less forage than was required. The experience of many kolkhozes and sovkhozes has shown that the return from feed increases noticeably if it is enriched using various chemical additives.

I recently visited the Grigorovskiy interkolkhoz complex in Kiyevskaya Oblast, where approximately 3,000 head of cattle are being fattened on beet pulp. Here the livestock breeders are adding a mineral-ammonia preparation to the feed that was created by scientists of the Institute of Biochemistry of the Academy of Sciences for the Ukrainian SSR, in collaboration with other scientific collectives, and they are obtaining good results. The director of the complex, L. Glukhen'kiy, who is a great enthusiast of this new development, stated:

"We have daily weight increases for each male calf of more than a kilogram. Almost all of the animals we ship to meat combines are in a high state of nourishment and their weight -- 410-430 kilograms. We are expending considerably less feed per quintal of meat than formerly, at which time the rations did not include such additives.

It bears mentioning that livestock are usually fattened on pulp for no more than 70 days. If a mineral-ammonia preparation is added to it, the fattening period can be extended to 4 or 5 months. Yes and the daily weight gains increase noticeably.

Under the conditions found in the republic, with large quantities of beets being processed, the use of additives represents an important reserve for increasing the production of meat. At the present time, hundreds of inter-enterprise fattening stations are operating in the vicinity of sugar plants, with more than 600,000 head of cattle being maintained at these stations. Moreover, mineral-ammonia premixes and another preparation -- carboxylin, developed at the same institute -- are producing fine results when added to conventional feeds.

A primary concern is that of how best to organize the production of mineral additives in the volume required. At the present time, they are already in production in a number of oblasts. For example, a specialized department in Ternopol' is furnishing approximately 1,000 tons of output annually. This is sufficient for adding to the rations for 30,000 head of cattle, for a fattening period of 120 days. Departments having such a capability are also to be found in other areas. However, the requirements for carboxylin and the mineral-ammonia preparation are much greater.

Unfortunately, the potential for producing mixtures is still limited: there are shortages of nutritional soda, magnesium sulphate, manganese and zinc. In solving this problem, the Ministry of Chemical Industry could furnish a great amount of assistance to the animal husbandry workers by increasing the production of these products in order to satisfy the agricultural requirements. It is obvious that a special mineral additives plant should be built in the future, since it is difficult to meet the requirements for such additives using the primitive method.

An entire series of other chemical agents, all of which are capable of enriching feeds with nutritional substances, has recently appeared. How can they be employed effectively? As a result of joint efforts by scientists and production workers throughout the republic, a great deal has been accomplished in connection with the use of nitrogenous compounds for compensating for a feed protein deficit in livestock rations. For example, compared to 7-8 years ago when only 3,000 tons of synthetic urea were expended annually for feed purposes, at the present time approximately 170,000 tons are being fed to the animals. For the purpose of training personnel in this work, seminars were organized on the farms of those establishments possessing the primary experience. Thus, as the saying goes, the ice was broken.

Today a majority of the kolkhozes and sovkhozes are convinced regarding the value of carbamide additives. They are being used in feed on many farms, including in silage.

In short, our livestock breeders already possess good experience in the seasoning of feed with carbamide. However, this experience is not being disseminated to the degree desired. One reason for this is the fact that the kolkhozes and sovkhozes obtain urea only as mineral fertilizer. It is received from the chemical enterprises in loose form, without packaging, and at times it is transported and stored with other types of fertilizers considered to be harmful to animals. Thus the farm workers at times are fearful of feeding it to the animals. The carbamide to be used in animal husbandry should be produced in packaged form and particularly that which is used as an additive to feed.

Chemistry in feed production -- here we have in mind microelements, the inclusion of which makes it possible to balance the rations to a better degree and raise their value. However, the requirements of the farms for such preparations are being satisfied by only 20 percent. And indeed a shortage of microelements is equivalent to a loss of protein. In solving these problems, the livestock breeders are pinning their hopes on receiving assistance from the Soyuzsel'khozkhimiya Association.

An equally important reserve for raising the quality of feed is its chemical preservation. According to the degree of preservation of nutrients, it occupies second place following the artificial drying of grasses. The use of preservatives during the laying in of silage is producing fine results. Indeed, under the usual conditions and owing to a poor supply of substantial silage installations for the farms and shortages of polyethylene film, this feed is often of low quality when received; the nutrient losses, including protein, reach 20 percent. But when conserved, their preservation is raised by 2-3 times.

The livestock breeders in a majority of the oblasts are creatively searching for methods for enriching their rations. For example, at interkolkhoz combines created in Chernovitskaya Oblast for the production of feed, chemical additives are being introduced in a skilful manner thus raising the nutritional value of the mixtures. It is by no means an accident that the farms in this area record the highest weight increases in their animals. In Vinnitskaya Oblast the mixed feed plants are attached to interenterprise facilities for the fattening of cattle. They produce complete-ration granules containing carbamide, mineral-ammonia additives and microelements. The experience of livestock breeders in Kiyevskaya and Chernigovskaya oblasts is rather instructive. At the same time, on a number of farms in Nikolayevskaya, Sumskaya and some other oblasts, the agricultural specialists and farm workers are devoting very little attention to the use of chemical processes in feed production and are failing to display proper initiative. It is obvious that success is being achieved in those areas where the chemical service is well established in animal husbandry. This is a new type of endeavor requiring special concern. Today there are zonal laboratories operating in each oblast in connection with the use of chemical processes in feed production. As a rule, they have been organized in the vicinity of oblast experimental stations and are responsible for supervising the introduction of new innovations and summarizing experience. Laboratories are also available at all of the animal husbandry complexes and on many farms. Their specialists, taking into account the analytic data, furnish assistance in composing the feeding rations and monitor the correct utilization of chemical additives. But it must be confessed that many of the laboratories are not performing in the manner intended. There are only a few good laboratories in Kirovogradskaya, Rovenskaya and Volynskaya oblasts. On a number of farms throughout the republic, they are for the most part inactive owing to a shortage of experienced chemists and laboratory workers. In the interest of correcting the situation, our ministry organized training courses for them at scientific-research institutes, experimental stations and zonal chemical laboratories. On a majority of the farms, it is still not possible to open laboratories for another reason: no equipment or apparatus is available for performing analysis or producing generalizations. This important problem should be the object of attention by Gosplan, Gossnab and the USSR Ministry of Agriculture.

Today, all specialists working in animal husbandry require a thorough knowledge of chemistry. The VUZ's should provide the future zootechnicians with a better understanding of this subject, in conformity with the needs of the branch. At the present time, there is a gap in the knowledge possessed by the young specialists in this regard.

The skilful use of the achievements of chemistry when processing and preparing forage will enable the farm workers to cope better with the wintering of the livestock and to increase their production of meat, milk and other products.

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LIVESTOCK FEED PROCUREMENT

FOOD SCRAPS FOR LIVESTOCK INADEQUATELY USED IN RIGA

Riga SOVETSKAYA LATVIYA in Russian 17 Feb 80 p 2

[Article: "Food Scraps--To Work: A Sharp Signal"]

[Text] As before, food scraps are being poorly used to feed cattle. This concerns Riga in particular.

S. Lasminas, for example, reports that food scraps are not hauled away from the territory of ZhER's [not further identified] Numbers 75, 78, 79, 80, 81 and 84, Proletarskiy Rayon of Riga for a month at a time or more. Containers for them are overflowing. Yard keepers are compelled to remove buckets for scrap collection from stairway landings and the residents are throwing food scraps into trash bins. At least 30 tons of such cattle feed have accumulated on the territory of ZhER's.

Members of the housing council of Building Number 35 on Revolutsiyas Street write to the editors that the situation is also no better in the Kirovskiy Rayon of Riga. Food scraps are not removed here from the area around the ZhER's nor from the yards of public catering enterprises and school cafeterias as well.

Food scraps from Riga should be delivered to the suburban sovkhoz "Ulbroka," where pigs are fattened. There are special installations for preparing high-quality feeds from the scraps by a heat treatment at this farm. Right now food scraps are frequently gathered by livestock owners on subsidiary farms located in the suburbs, who have no capability of processing them correctly.

The short supply of truck transport is the main cause for the untimely delivery of this valuable raw material for producing feeds. The special motor transport enterprise of the Riga Gorispolkom does not allocate enough container carriers to this end, counting on a shortage of them. The schedules for them going out on their routes are frequently disrupted, but a way out must be found. On frosty days in particular, such a cargo may be transported in ordinary curb-side equipment.

Food scraps are an important aid for strengthening the feed base. The Riga Gorispolkom should urgently take the necessary steps for their timely removal. Soon the thaws will begin and food scraps will spoil, a fact which can seriously reflect on the sanitary condition of the city.

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LIVESTOCK FEED PROCUREMENT

FOOD SCRAP COLLECTION PROBLEMS IN OREL AREA

Moscow PRAVDA in Russian 4 Apr 80 p 1

[Article by E. Dorofeyev, head of the division of ORLOVSKAYA PRAVDA and N. Utkin, PRAVDA correspondent: "Using Cheap Feeds"]

[Text] The subsidiary farm of the cafeteria trust is making an even greater contribution to the improvement of public catering to residents of Orel. Last year it produced several hundred tons of pork. Let us note that the animals were fed primarily on food scraps delivered to the farms from the city. This fact itself attests to the fact that regular collection of the scraps in the residential sections of the city and in working villages, at cafeterias, nurseries, hospitals and schools, wherever they are, is necessary.

Unfortunately, not everything is undertaken in this city so that such an important reserve is used with total efficiency. Last year the food-scrap procurement plan was essentially disrupted in a number of rayons.

"It is possible to change the situation for the better," said I. Timokhin, chairman of the Ispolkom of the municipal council at one of the sessions, "through the total efforts of workers, housing and municipal services, specialized service stations and food scrap collection offices. All of the conditions exist in the city for auxiliary farms to receive no less than 25 tons of feed daily."

A specific task has been set, and how is it being executed?

We visited the trust's subsidiary farm to get an answer to this question. Its director, A. Perepelova, took the accounts book.

"Judge for yourselves," she said, "in January, 254 tons of scraps were delivered in all, or one third as much as there should have been. In February there were also irregularities: Sometimes they'll bring 16 tons per day, sometimes half as much, and it's really bad on Saturday and Sunday. The gorispolkom's directive that the truckers should work on a sliding schedule is not being followed. It is impossible to achieve the necessary weight increases under such conditions."

One wants to believe that the Orel Gorispolkom can achieve a sudden change for the better. But there is yet another side to the question. We are speaking of the collection of food scraps at cafeterias, schools, hospitals and nurseries. The oblast public catering administration is responsible for this sector of the work. It achieved a certain increase in feed collection in comparison with 1978, but there is still an untouched area of concern here.

The whole snag is in the short supply of transport. Is it really possible to go around to all the points in the city using just the two trucks which the oblast administration has at its disposal? The picture is the same in Livny, Mtsensk and other inhabited points. Who should help out here? It appears that, first of all, it is the RSSR Ministry of Trade. Internal resources must be better used.

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LIVESTOCK FEED PROCUREMENT

FOOD SCRAPS USED FOR FEED IN BELORUSSIA

Minsk SEL'SKAYA GAZETA in Russian 1 Apr 80 p 2

[Article by Z. Gil'man, department head, Belorussian Scientific-Research Institute of Animal Husbandry, doctor of agricultural sciences, professor, member of the public council of SEL'SKAYA GAZETA for propagandizing the achievements of science and foremost experience and E. Kovalenok, senior research associate at the Belorussian Scientific-Research Institute of Animal Husbandry and candidate in economic sciences: "Food Wastes--To Work?"]

[Text] Food scraps are a large supplemental source of feed for swine. Last year, for example, about 150,000 tons of them were collected. This is 300,000 quintals of feed units. Presently, the supply of food scraps food scraps in just Minskaya Oblast for the first quarter has increased by 11 percent. Work in the other oblasts of the Republic has also improved significantly. Now, more than 130 farms are using such feed on their swine farms.

Here is a concrete example. At the swine raising complex "Vyuzhnyy," Gomel'skiy Rayon, about 15,000 tons of scraps are used annually. Feed pigs weighing up to 50 kg are given 2.5 kg of these scraps, the same amount of combined feed of the simplest recipe, 50 g of grass flour and 75 g of feed lysine on the average. In the start of the second fattening period, the norm of scraps for pigs with a high live weight is increased to 3.5 kg and at the end to 4.5 kg. In a word, more than 15 percent of the grain feeds necessary for fattening livestock are replaced by the scraps on this farm.

About 5,000 tons of food scraps are used annually on the Sovkhoz "Borovlyamy," Minskiy Rayon. Eighteen percent of the feed units consumed at the complex are from this feed. For the year, 9,000 quintals of pork were raised at the farm at a production cost of R108 each.

The manufacturing process for preparing this feed is most highly perfected at the sovkhoz imeni Ul'yanov, Minskiy Rayon. In a well-equipped feed shop with an output of 60 tons per day, a set of equipment has been installed to provide for automated processing of the feed scraps, mixing them with other feeds and delivering them into feed troughs. Two operators with a control panel manage all of this.

However, the possibilities for supplementing feed resources by a more efficient use of scraps are far from exhausted. It has been established by observations that it is possible to collect 150-200 grams of scraps on the average per person per day, or 55-73 kilograms per year in the cities.

The cost accounting type, non-plan feed offices created in each oblast and in the city of Minsk are the primary organizers of food-scrap collection. Their experience is being inadequately generalized. The offices need the assistance of the councils, municipal health divisions, municipal education division, and establishments having departmental residences. Let us take as an example the city of Zhodino. In the regions of the Belorussian Scientific Research Institute of Fur Farming and the Belorussian Scientific Research Institute of Animal Husbandry, the plan for food waste collection is presently being overfulfilled, whereas in the area of the automobile plant a very small amount is collected and only because the plant administration regards this matter with scorn. In the departmental buildings of the automobile plant, trash can areas are yet to be found. The small number of cans put out on the initiative of the office are in a neglected, unsanitary state. The Gorispolkom [Mnnicipal Executive Committee] is not helping to make matters run smoothly. The criticism of SEL'SKAYA GAZETA in the article "Save the Food Scraps," published 19 August 1979, has as yet had no effect. Everything remains as before.

And yet it is possible to organize matters following the example of Molodechno, Borisov, and Bileyka. There, food waste collection is under the permanent control of the gorispolkoms. The municipal housing management, municipal education division and the municipal health divison systematically report to them concerning the fulfillment of established quotas for scrap collection in residences, children's and school institutions, hospitals and sanitoriums. As a result, they collect twice as much refuse per resident in Molodechno and Borisov as the average among the other cities in the republic.

Inadequate explanatory work among the people is hindering the matter. The incentive measures for people directly participating in the work are not known to everyone. The farms which use the scraps transfer 15 rubles per ton to the collection offices. A large part of this sum is paid to collectors. A collector who works well (a yard man, a cleaning woman, an elevator operator) receives R67-70 per month in addition to his base pay. The total of such salary is taken into consideration when figuring pensions. If this were known to all of the workers in a communal household, many more scraps would doubtlessly be delivered.

The offices which are engaged in scrap collection are experiencing great difficulties because of the short supply of containers and special transport.

For example, there are not enough trash cans in the Minsk oblast office and not enough special trucks in the Minsk municipal office. The same sovkhoz imeni Ul'yanov is not able to take away the scraps from the Minsk dining halls entirely, just because of the fact that it has only three broken-down trucks ready to be written off.

The short supply of trash cans is explained not only by the untimely and incomplete filling of orders for their manufacture, but by the fact that the offices do not always have means for their purchase and maintenance at their disposal. For example, a Minsk oblast office is now short R20,000 for acquiring inventory. The office could emerge from its financial difficulties if it could sharply increase scrap collection. You get a vicious circle. It is possible to emerge from it if enough food scraps are prepared through the offices not only from the people and from public catering enterprises and commercial organizations, but from enterprises of the meat and dairy industry as well. Such a measure was specified by the special decrees of the elective bodies, but it remains unfulfilled up to now.

The existing order for distribution of food scraps is far from being ideal. Not all of the farms are supplied with modern equipment to process its feed. In a number of locations, the preparation of scraps for feeding is being done primitively.

Increasing the selection and the proper use of food scraps will permit us to replace at least an additional 30-39,000 tons of grain annually on the republic's swine farms. This reserve must be valued.

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FOOD SCRAPS COMPARED WITH OTHER FEED ADDITIVES

Minsk SEL'SKOYE KHOZYAYSTVO BELORUSSII in Russian No 2, Feb 80 p 32

[Article by S. E. Margolin, head of the Department of Livestock Raising, Minskaya Oblast Experimental Agricultural Station; Ye. F. Kanashkova, research associate; and F. I. Suboch, head of the Department of the Scientific-Production Association for Production of Potato Products: "Scraps To Work"]

[Text] In livestock raising the shortfall in feed protein at the present time is reaching 20-25 percent. This shows up negatively in the productivity of the animals and it results in high feed costs. Synthetic nitrogen-containing preparations are used on some farms to supplement the ration with protein. However, the protein shortfall may also be supplemented by using many production wastes. For example, 50-60,000 tons of scraps accumulate annually at the republic's enterprises for producing dried potato products. What can be done so that they are not wasted?

We performed an experiment to produce nitrogen-containing additives made from scraps at the Gantsevichskiy Experimental Vegetable Drying Plant. We used a process proposed by the Odessa Technological Institute. What is the essence of it? The potato scraps are loaded into a steam cooker where the starch is broken down into sugars by acid hydrolysis. On termination of the process, urea is added to the hydrolyzate, glycosilurea, which breaks down slowly in the rumen and is better utilized by microorganisms, being formed. There are 0.49 feed units, 275 grams of protein, 16 grams of phosphorus and 1.3 grams of calcium in a kilogram of the obtained product.

We fed the obtained product to young cattle at an experimental base of the experimental agricultural station. One third of the portion of soybean cake and urea which are added to balance the ration of protein were replaced by it. As a result of a three-month test, it was established that the increase in the live weight in the experimental group was 3.6 percent greater than in the group with soybean cakes and 15.6 percent greater in comparison with the group on urea. Feed unit consumption per kilogram of weight gain in this group was 6.4 percent lower than in the group in which the animals were fed on soybean cake and 14.6 percent greater in comparison with the urea group. On the average, the young livestock were fed 930 grams of nitrogen-containing additive produced from potatoes, 719 grams of soybean cake and 91 grams of urea per day, according to the designs of the experiment.

The experimental additive was given to young bulls without an accustomation period. No instances of breakdown in physiological state were noted.

The production cost of one quintal of weight gain in the experimental group was R106.7 as opposed to R108.1 in the group with soybean cake and R121.2 in the group with urea. Thus, production wastes may also be of use if they are sensibly used.

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LIVESTOCK FEED PROCUREMENT

ESTONIAN LIVESTOCKMEN URGED TO CONSIDER GOAT'SRUE

[Editorial Report] Tallinn SOVETSKAYA ESTONIYA in Russian on 12 March 1980 on page 2, turns its attention to the problem of protein in livestock feed and the insufficiency thereof. The author, head of the field work section at the Estonian Scientific Research Institute for Crop Farming and Reclamation, Doctor Kh. Rayg, in a 2600 word article, looks to Caucasian goat'srue (Kozlyatnik vostochnyy [Galega orientalis]) to ameliorate the situation.

"It is generally known that due to the protein deficiency an enormous overexpenditure of feed exists in livestock rations."

Doctor Rayg makes the point that Caucasian goat'srue can do much to make up the deficit without the application of costly nitrogen. The area sown thereto could be expanded to 10,000 hectares in the near future. Everything necessary is already available.

The northern regions of the country are still not well endowed with feed crops. Crops brought in from other areas often do not give seed. This is true, in particular, of such a valuable feed crop as alfalfa. It is precisely because of this lack of seed that in Estonia and other regions of the Non-Chernozem Zone the area sown to alfalfa is expanding very slowly.

Cattle are poorly supplied with green chop in the early spring, there is a lack of protein in the rations which negatively affects livestock productivity. Despite the problems encountered initially after its importation from the south goat'srue is a vitamin rich feed crop with half as much dry protein as clover.

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BRIEFS

STRAW USED FOR CATTLE FEED--In Moscow PRAVDA in Russian on 14 January 1980, page 2, and in Krasnodar SEL'SKIYE ZORI in Russian No 12, December 1979, page 44, two articles urge Krasnodarskiy Kray livestockmen to look to the straw byproducts of rice and cereal crops as a source of cattle feed. A 400-word article by D. Posokhov concentrates its attention on the advantages and modes of preparation of rice straw for feeding to steers. An 800-word article broadens the scope somewhat. The authors T. Dubonosov and I. Lukin make the point that while the problem of mechanization of the grain harvest in the USSR has been solved, the problem of gathering up of straw and chaff remains only half solved. Straw bundles are left as part of the trash in the fields and chaff in many places is scattered to the wind. And yet in nutrient value it is only a little behind hay. The Krasnodarskiy Kray experience is distinguished from the laxity and neglect elsewhere. "In the Kuban' area they have been gathering up all the wheat and oats chaff for several years already, 700,000 to 800,000 tons of additional feed per year. In the winter they enrich it with concentrates and vitamin additives. It serves as a good supplement in increasing cattle productivity. Now they are also gathering barley chaff and making it into granules." [Editorial Report]

SOYBEANS AS FEED--Kiev SIL'S'KI VISTI in Ukrainian on 19 April 1980, page 2, carries an article several thousand words in length with details of the proper technology for raising an abundant soybean crop. The introduction points up the importance of the soybean crop and projects the magnitude of the harvest thereof. "The intensification of animal husbandry is affected by many factors. Chief among them is a sufficiency of feed balanced for protein.... The bean contains 18 to 22 percent oil, 38-45 percent protein, half of which becomes unsubstituted amino acids, rather many vitamins, hydrocarbons and mineral salts. The green mass of soya is also rich in these nutrients. Enterprises which meet these requirements [of the new technology] are gathering 15-20 quintals of soybeans per hectare from bogharic land and 25-30 quintals from irrigated land. In 1980 the soya field in the republic will occupy nearly 100,000 hectares. On 70,000 hectares it will be grown according to the progressive technology which will guarantee the gathering of 20-25 quintals of soybeans per hectare." [Editorial Report]

GOAT'SRUE RECOMMENDED TO LIVESTOCKMEN--In Kiev SIL'S'KI VISTI in Ukrainian on 18 April 1980, page 2, a 300-word article appears lamenting the lack of attention paid by livestockmen to Caucasian Goat'srue (Kozlyatnik Skhidnyy [Galega orientalis]) for livestock feed and proceeds to point up the advantages of cultivating it. It is worth noting that this is not the first time goat'srue has been recommended. In Tallinn SOVETSKAYA ESTONIA in Russian on 12 March 1980, page 2, a longer article went into greater detail on the advantages of cultivating Caucasian Goat'srue and the progress of adapting it for cropping in Estonia. [Editorial Report]

MOLDAVIAN LIVESTOCK CONSUMPTION--[Editorial Report]--In Kishinev SEL'SKOYE KHOZYAYSTVO MOLDAVII in Russian No 3, Mar 80 p 53, an article by N. Koditsa of the Moldavian agricultural journal turns its attention to the abilities of the USSR, the U.S. and Canada to produce grain and other agricultural produce. While the article is quite positive in its treatment of Soviet agricultural development it does make one interesting admission that not everything is quite as it should be. "The country, yes and the republic [Moldavia] has a sufficient quantity of grain at their disposal. However, it is not being used rationally everywhere. In Moldavia up to 50 percent of the grain (by nutritiousness) is expended in rations for large horned cattle. Along with this world practice and the experience of leading farms shows that with rations well balanced in proteins one can get beef with high gustatory qualities without the use of concentrates."

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LIVESTOCK

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FATTENING OF BLACK SPOTTED STEERS IN ENCLOSURES, SEMI-ENCLOSED LOTS

Moscow ZHIVOTNOVODSTVO in Russian No 1, Jan 80 pp 34-35

[Article by Corresponding Member of the All-Union Academy of Agricultural Sciences imeni V. I. Lenin I. I. Cherkashchenko and graduate student of the Moscow Agricultural Academy imeni K. A. Timiryazev A. S. Delyan: "The Fattening of Black Spotted Calves in an Enclosure and a Semi-Enclosed Lot"]

[Text] In the conversion of beef production to an industrial basis along with the construction of capital complexes for the raising and fattening of young cattle in enclosures in recent years the fattening of animals at mechanized lots has become widespread.

Practice shows that in the average daily weight gain and the consumption of fodder the fattening of cattle in standard enclosures is the most effective. However, the construction of such complexes requires major capital investments (the cost per cattle-place is 800-1,400 rubles) and involves great expenditures of time. The technology of fattening cattle at mechanized lots, on the construction of which less capital is spent (the cost per cattle-place does not exceed 250-300 rubles), has an advantage in this respect.

The analysis of the economic activity of feedlots by zones of the country attests to the great economic efficiency (G. V. Yepifanov, 1975; D. L. Levantin, 1977; G. S. Ogryzkin et al., 1977, and others).

At present the fattening of cattle at lots is becoming widespread in the Central Nonchernozem Zone of the RSFSR. Therefore the conducting of experiments for studying the growth, development, fattening and meat qualities of young cattle during raising and fattening at mechanized lots and in standard barnyards is now of great importance.

The study of the questions of raising and fattening young cattle at mechanized feedlots was also a goal of our research. In our research we studied the growth, development, level of meat productivity and quality of the meat of black spotted bull calves. We conducted the experiments at the Kostrovskiy Sovkhov of Istrinskiy Rayon in Moscow Oblast during the period of

1977-1978, it consisted of two periods: a preliminary period (68 days) and an experimental period (357 days).

For the experiment we selected 54 3-month-old bull calves with an average live weight of 98 kg. During the preliminary period the calf was raised according to the technology used at the farm. At the end of this period the calves were evaluated according to the vigor of growth and with allowance made for the type of build were divided into two similar groups of 25 each (Table 1).

Table 1

Average Live Weight and Vigor of Growth of Test Calves During the Experimental Period

Indicator	Control group	Test group
Average live weight of calves (kg):		
when provided for the experiment.	97.3	98.4
at the end of the preliminary period.	159.6	160.2
Average daily weight gain during the 68 days of the preliminary period (g).	916	908
Relative rate of increase (percent).	48.1	47.5

The control group of calves was transferred to a barnyard for the second period of raising, where the animals were kept in pens using the group loose housing method until the end of the experiment. The test group was transferred to a light-duty feedlot, which was constructed according to the plan of the All-Union Scientific Research Institute of Meat and Dairy Cattle Raising (the author of the plan is Yu. I. Belyayevskiy). It has a solid roof and is interconnected with a light enclosure, within which two rows of stalls were installed parallel to each other. The floor in the stalls is made from wood. The separators in the stalls are made from round pipe.

The animals of both groups had free access to fodder. The feeding was in groups, two times in accordance with the standards of the All-Union Scientific Research Institute of Livestock Breeding. The diet of both groups in composition and food value was the same. A concentrate mixture, food and vegetable scraps, hay, straw and grass meal were used as the main fodders in the diet of the animals. During the summer green matter was included in the diet. In spite of the identity of the diets, the consumption rate of fodders by animals of the different groups was different: the calves of the test group consumed more bulky fodders, which were given to both groups freely. As a result the consumption of fodder per calf of this group increased somewhat and for the entire period of the experiment was 3,012 fodder units (the consumption of fodder by the control group of calves was 2,809 fodder units). In food value the concentrated fodders in the diet of the calves of the control group were 53.5 percent, the test group--51.5 percent.

Table 2

Average Live Weight and Average Daily Weight Gain of Calves During the Experimental Period

Age (Months)	Month of year	Number of calves	Dynamics of live weight		Average daily weight gain (g)		
			control group	test group	period (days)	control group	test group
5	June	25	159.6	160.2			
6.5	July	25	199.4	189.5	40	991	736
7.5	August	25	229.4	221.0	31	968	1003
8.5	September	25	259.8	252.7	30	1013	1072
9.5	October	25	288.4	281.1	31	925	915
10.5	November	25	313.0	304.8	30	822	786
11.5	December	25	339.1	323.7	31	841	608
12.5	January	22	367.1	340.5	31	899	553
13.5	February	22	392.2	364.1	28	898	810
14.5	March	22	417.8	394.3	31	825	974
15.5	April	17	444.9	425.3	30	878	1020
16.5	May	17	466.7	457.1	31	705	1024
17	June	17	477.2	469.6	13	802	915

Table 3

Results of Control Slaughters of a Young Test Animal (M±m)

Indicator	At the age of 14.5 months		At the end of fattening (17 months)	
	control group	test group	control group	test group
Number of animals (head). . . .	5	5	5	5
Average weight (kg):				
culling weight.	414.0±2.44	388.8±3.38	473.6±1.93	466.2±4.62
preslaughter weight	389.6±2.73	365.2±5.11	454.4±2.03	448.0±3.46
fresh carcass	212.2±1.82	200.6±3.77	261.6±2.39	256.7±5.90
internal fat.	11.6±0.81	6.5±0.68	16.2±0.87	15.0±0.90
carcass and fat	223.8±1.56	207.1±3.92	277.8±1.90	271.7±6.14
Yield (percent)				
carcass	54.6±0.45	54.9±0.26	57.6±0.62	57.5±1.13
fat	3.0±0.20	1.8±0.08	3.6±0.19	3.4±0.19
carcass and fat	57.4±0.28	56.7±0.28	61.1±0.49	60.6±0.98
Content in carcass (percent)				
flesh	79.1±0.62	76.8±0.77	81.0±0.40	79.7±0.17
bone.	18.2±0.66	19.3±0.48	16.7±1.11	17.1±0.18
tendons	2.1±0.27	3.6±0.41	1.9±0.08	2.6±0.03

The average live weight and the average daily weight gain during the experimental period per calf are cited in Table 2.

The animals of both groups in the vigor of growth (by months of the experimental period) differ substantially from each other. During the first month at the feedlot the growth rate of the calves in the test group decreased, which is connected with adaptation of the animals to the new conditions of housing. During the entire summer period of 1977 the average daily weight gain of the calves of the control group was 125 g (14.6 percent) greater than that of the test group and was 982 g. The vigor of growth for the animals of both groups during the period of the experiment was the highest in September, and the average daily weight gain per calf of the test group was slightly greater (1,072 g) as compared with the control group (1,013 g).

During the autumn period the vigor of growth of the animals of both groups declined somewhat. During the entire autumn season the average daily weight gain per calf for both groups was practically the same: 929 g for the control group and 917 g for the test group. With the onset of cold weather during the winter period the average daily weight gain in the test group decreased to 640 g, which as compared with the control group is 237 g or 37 percent lower ($P < 0.001$). The retardation in the growth of the calves of the test group during the winter was offset to a considerable extent by faster growth in the spring. At that time the average daily weight gain for them was 997 g, which is 206 g or 20.6 percent ($P < 0.001$) greater than in the control group. During the entire experimental period the average daily weight gain for calves of the control group was 888 g, of the test group--862 g, the difference of 26 g (3.0 percent) is statistically doubtful. The consumption of fodder per kg of weight gain during the same period for calves of the control group was 8.03 fodder units, the test group--8.93 fodder units, and for the entire period of the experiment 7.39 and 8.11 respectively.

The control slaughter of animals at the ages of 14.5 and 17 months was carried out to study the meat productivity (Table 3).

The weight of the carcass is the most important indicator which characterizes the meat productivity of cattle. At 14.5 months for calves of the control group it was 11.6 kg more than for the test calves ($P < 0.05$). When the animals were slaughted at the age of 17 months the difference decreased considerably and was 4.9 kg. No significant difference was observed between the groups in the yield of the carcass. With age this indicator for both groups increased slightly. When slaughted at 14.5 months of age the yield of internal fat for calves of the control group was considerable higher and was 11.6 kg (3.0 percent of the preslaught weight). This, apparently, is explained by the fact that the time preceding the slaughter coincided with the cold season of the year, during which among calves of the test group, which were housed on the feedlot, the consumption of fodder for maintaining life increased, which led to a decrease of the formation of internal fat. With the onset of the warm season of the year the fat formation among them increased sharply, and at the end of the fattening (17 months of age) there were practically no differences between them.

The coefficient of meatiness (the yield of flesh per kg of bone) for both groups was quite high. When slaughted at 14.5 months the yield of flesh per kg of bone for calves of the control group was 10.0 percent higher as compared with the test group. When slaughted at the end of the fattening this difference decreased considerably (4.3 percent).

Cold weather had an adverse influence on intermuscular and intramuscular fat formation. The content of fat in the average sample of meat, which was obtained on slaughter at the end of the winter from calves of the test group, was 8.8 percent, the control group--14.7 percent. With the onset of warm weather the intensity of fat formation among the animals housed at the feedlot increased sharply, which led to a decrease of the difference in this indicator between the groups. The fat in the average sample of meat, which was obtained at the end of fattening, in the control group was 17.3 percent, in the test group--15.1 percent. Similar changes were also detected during the analysis of a sample of the longest muscle of the back.

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FEEDLOT FATTENING OF CATTLE

Moscow ZHIVOTNOVODSTVO in Russian No 1, Jan 80 pp 35-37

/Article by Candidate of Economic Sciences I. I. Vostrikov, secretary of the Orenburgskaya Oblast Committee of the CPSU, and Candidate of Agricultural Science G. I. Bel'kov, deputy director of the All-Union Scientific Research Institute of Metrological Services: "Peculiarities of the Technology of Fattening Cattle at Feedlots"/

/Text/ In connection with the implementation in our country of measures on the specialization, concentration and conversion of livestock breeding to an industrial basis a careful evaluation of the existing methods of raising and fattening cattle and the elaboration of new, more effective beef production technologies are necessary. For example, feedlots, which have been constructed and are in operation in Orenburgskaya, Rostovskaya, Kurganskaya and Novosibirskaya oblasts, Krasnodarskiy, Stavropol'skiy and Krasnoyarskiy krays and elsewhere, have become widespread.

The comparison of the indicators of the operation of large complexes and feedlots attests that in 1979 the average daily weight gain of young cattle, which are raised at complexes with a regulated microclimate, ranged from 744 to 1,090 g, while at lots it ranged from 710 to 829 g. The best results were obtained at complexes of the enclosed type, where the raising of calves 7 to 14 days old is combined with intensive fattening to a live weight of 430-480 kg.

The heating and ventilation system used at complexes ensures the maintenance of the optimum microclimate in the enclosures, which favorably influences the productivity of the animals. The construction of complexes of this type will unquestionably make it possible to increase beef production and its efficiency. However, their creation involves considerable capital investments. Numerous studies have established that the fattening of young cattle can be carried out in light enclosures.

A series of experiments on the fattening of cattle at open lots of various types, which were conducted by associates of the VNIIMS /All-Union Scientific Research Institute of Metrological Services/ and other institutes in various climatic zones, showed their great efficiency. At the same time it was established that the technology of fattening cattle at lots and their structural solution should conform to the specific natural and climatic peculiarities of the zone with allowance made for the feed and a large number of other factors.

When housing animals on lots climatic factors, and first of all such factors as the air temperature and humidity, precipitation, wind, insulation and so on, have a great influence on their condition and, consequently, on their productivity. The analysis of the results of the fattening of cattle at the interfarm lots of Orenburgskaya Oblast showed that their productivity largely depends on the season of the year. In autumn and winter the average daily weight gain of calves is approximately 19 percent lower, while the expenditures of fodders per unit of weight gain are 20-30 percent higher than in the spring and summer.

At the lots of Orenburgskaya Oblast, which are located in a zone with a rigorous, sharply continental climate, during the coldest season substantial adjustments are made in the rations of the animals: their total food value is increased, the composition is changed. The rate of silage in this case is reduced, while the rate of coarse and concentrated fodders is increased. Moreover, the amount of bedding is increased, additional steps are taken to remove snow and manure from the pens and to protect the animals from the wind.

Well-organized fodder preparation is of considerable importance here. For this purpose fodder shops, which make it possible to grind and mix the fodders and to enrich the obtained mixtures with protein and mineral substances and vitamins, have been built at all the interfarm lots. Granulators and pellet-makers have been installed in many shops. The formula of the granules and pellets for different age groups of animals is different. It is also changed depending on the season of the year. It should be noted that at all the lots the fattening is carried out using fodders of their own production with the extensive use of straw, silage, haylage and scrap grain. As a rule, state mixed fodders are used at the complexes. At the same time the proportion of concentrates in the ration frequently exceeds 70 percent.

The observance of the indicated and several other technological conditions makes it possible also during the winter to obtain at the lots a quite high weight gain. Thus, in December, which was notable in 1978 for hard frosts, at four lots of Orenburgskaya Oblast an average daily weight gain of 900 to 1,000 g was obtained, at eight lots--700 to 800 g. This attests to the fact that the decrease of the productivity of animals in the winter depends not only on the weather conditions, but also on a large number of other factors of an organizational nature.

Knowledge of the process of adaptation of animals to different environmental conditions is the basis for the development of the plans of more modern enclosures and feedlots. The first lots built in Orenburgskaya Oblast were pens, which were equipped with three-wall sheds for the animals to rest in and open sheds for the feed boxes and the feeding passages. Their use during the winter months showed that as a result of the worsening of the microclimate and the dirtiness of the pens the average daily weight gain of the cattle decreased to 450-500g, while the outlays of fodders per kg of weight gain during the coldest months increased to 11-12 fodder units. This prompted the associates of the VNIIMS to draw up a new plan of the feedlot, which provides for the interconnection of the pens with an enclosure of the light type and the installation of windbreaks and snow fences and elevated sections in the form of hills. For the purposes of improving the sanitary condition the area of the pens was increased to 18-24 m^2 per animal. A version of the lot, which is equipped with stalls, is envisaged for farms which do not have an adequate amount of bedding. A comparative study of the effectiveness of fattening at lots of the new type and at the open yard showed that from December to March the average daily weight gain of castrated young bulls, which were kept at a lot interconnected with an enclosure of the light type, was 15.2 percent higher. In December the daily weight gain of the animals of the test group was 21.8 percent higher, in January--23.2 percent higher. From December to March the castrated young bulls of the test group consumed 8.4 fodder units per kg of weight gain, while those of the control group consumed 10.6 fodder units. In December and January this difference increased to 26.6-30.2 percent (table).

Effectiveness of the Fattening of Young Bulls at Lots of Various Types

Indicator	Housing conditions: Open lot	Housing conditions: Lot interconnected with an enclosure of the light type
Live weight of animals on delivery for fattening at the age of 9 months (kg)	222.6	221.3
Live weight of animals at the age of 17 months (kg)	440.6	451.9
Average daily weight gain (g)	870	919
including during December-March (g)	737	845
Cascass weight (kg)	233.0	236.9
Fodder consumption per kg of weight gain (fodder units)	9.40	8.18
including from December to March	10.62	8.37
Profit from sale of 1 animal (rubles)	474.88	487.50

It is necessary to carry out the creation of hills at lots in all zones, but a particular need for them exists in regions with a large amour of precipitation. Observations show that in pens with flat ground the integument of the animals is highly contaminated. This upsets the processes of thermoregulation and leads to overcooling of the body. The careful planning of the pens, the construction of drainage canals and their regular cleaning are conducive to the maintenance of a satisfactory sanitary condition of the pens.

The time studies made at the lots of Orenburgskaya and Rostovskaya oblasts showed that the most significant change in the daily rhythm of the main elements of the behavior of the animals occurred on days when there was precipitation accompanied by an intensification of the wind. In freezing windless weather the cattle, as a rule, do not go into the shelter, are more willing to eat fodder and rest more while lying. Their average daily weight gain in this case decreases to a lesser extent. Hence, it is necessary to protect the animals first of all from precipitation, the contamination of the pens and the wind, and then from the cold.

The building of capital heated lots, as the work experience of the farms of Orenburgskaya Oblast showed, does not have a favorable influence on the results of fattening. The average daily weight gain and the outlays of fodders at the lots, which are interconnected with reinforced concrete enclosures with an insulated roof with the organization of feeding and drinking inside the buildings, turned out to be the same as at conventional lots. In the enclosures in this case the range of fluctuations of the air temperature and humidity increases, the concentration of harmful gases rises. The specific capital investments per cattle-place increase from 240 to 410 rubles, which decreases the efficiency of fattening and deprives this beef production method of its main advantage--its degr[illegible]f economy. Therefore, the recommendations of some scientists to heat the enclosures for fattening, as the studies of the VNIIMS and the extensive production experience of the operation of the interfarm lots of Orenburgskaya Oblast showed, are without grounds.

Of the cattle breeds, which are being bred in the zones of the Southern Urals, the young stock of the Kazakh white-headed breed are notable for the highest productivity when fattened at lots. The average daily weight gain of the castrated young bulls of this breed was 9.4 percent higher than for the red steppe breed and 1.7 percent higher than for the Simmenthal breed. It is typical here that during the winter the productivity of the animals of the Kazakh white-headed breed decreased to a lesser extent. Nevertheless the castrated young bulls of all the indicated breeds after eight months of fattening attained a rather high live weight--440-470 kg.

Thus, the main technological demands on the fattening of cattle at open lots can be reduced to the following:

the feeding of cattle should be full-value for the entire period of fattening and in the winter should offset the additional expenditures of energy by the body for maintaining homeostasis. It is necessary for the animals to use fodders only in prepared form;

the animals being fed at lots should have dry cover for resting. It is possible to achieve this by the interconnection of the lots with enclosures of the light type or three-wall enclosures, the creation in them of deep bedding, and in its absence by the installation of stalls;

in order to improve the sanitary condition of the pens it is necessary to locate the lots on a site having an inclination of 4-6°, while in zones with a large amount of precipitation it is necessary to make a solid roof;

in order to prevent snowdrifts from the direction of the prevailing winds the lots must be enclosed by a fence at a distance of 40-50 m. In order to protect the animals from the wind each pen should be enclosed by a fence;

during the winter months it is necessary to water the cattle from AGK-4 fountains, which make it possible to warm the water;

in order to fatten animals at lots it is necessary to prepare in advance. The calves of dairy breeds, which are raised, as a rule, in heated enclosures, should undergo acclimation in unheated buildings with free access to exercise yards. Calves of meat-producing breeds, which are suckled, should be weaned in due time and be accustomed to eating coarse and succulent fodders;

the groups of young stock for fattening at yards must be made up with allowance made for the live weight and age.

The analysis of the operation of several lots shows that the low level of feeding and the poor preparation of fodders for feeding, the improper selection of the territory for construction, the contamination of the pens due to the improper formation of the bedding, irregular cleaning, the lack of drainage canals, snow fences and windbreaks and the violation of the rules of the making up of the livestock population and the technology of fattening must be considered the most widespread factors which reduce the efficiency of the fattening of animals.

The fact that the interfarm lots of Orenburgskaya Oblast are located within one administrative rayon is of considerable importance. This makes it possible to carry out efficiently the management of their operation, to solve more rapidly questions on the strenghtening of the fodder base, the supply of the lots with livestock, the maintenance of machinery and equipment and the settlement of differences between the suppliers of cattle and the main farm.

About 70 percent of all the young stock sold to the state are fattened at the lots of Orenburgskaya Oblast. In addition to the above-indicated demands, a set of measures on increasing the efficiency of beef production has been elaborated here.

About 200,000 head of cattle are annually fattened to a live weight of 400 kg and more at the interfarm lots of the oblast. The average daily weight gain of the livestock population on the average during 1974-1978 was 688 g, which is considerably higher than at kolkhozes and sovkhozes. The labor inputs per quintal of weight gain were reduced to 6-7 man-days, fodders--to 9-10 quintals of fodder units. It should be noted that the conversion of beef production to an industrial basis took place without a significant increase of capital investments. In all 33.5 million rubles were spent on the construction of feedlots, while the amount of the profit obtained during their operation was more than 100 million rubles, that is, the expenditures have been repaid nearly threefold. This is enabling the farms to perform work on increasing the capacities of the lots. Right now young stock with a live weight of 120-140 kg are arriving at some lots, and in the near future it is planned to accept all calves after weaning for raising and fattening.

In this connection the design decision of newly built lots has changed somewhat. In order to house light-weight young stock during the adaptation period the enclosures are being equipped with stalls, and the troughs are being installed within them.

In response to the decisions of the July (1978) CPSU Central Committee Plenum the livestock breeders of Orenburgskaya Oblast assumed greater socialist obligations. The initiators of the competition are the collectives of the Ilekskiy, Tashlinskiy and Asekeyevskiy interfarm lots. In 1979 the average daily weight gain here was 763-804 g, while the live weight of the cattle when sold was 411-453 kg. They spent 8-10 quintals of fodder units and 5-6 man-hours per quintal of weight gain. The link of USSR State Prize winner A. S. Grigor'yev, a senior operator of the interfarm lot of the Magnitostroy Sovkhoz, in 9 months of 1979 fattened 1,020 head of cattle, having spend 8 quintals of fodder units per quintal of weight gain. The average daily weight gain of the young stock in 1979 was 948 g, while the production cost of a 1-quintal weight gain was 97 rubles. The results achieved by the leading collectives and links attest to the large untapped reserves for increasing the productivity of cattle at lots.

Thus, the data of scientific research and the gained production experience make it possible to conclude that during the present period the fattening of cattle at lots is a practicable and the quickest means of converting beef production and, in particular, its final stage--fattening--to an industrial basis.

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FINISHING, FATTENING IN LIGHT ENCLOSURES, ON FEEDLOTS

Moscow ZHIVOTNOVODSTVO in Russian No 1, Jan 80 pp 37-39

/Article by S. V. Poluektov, graduate student of the All-Union Scientific Research Institute of Animal Husbandry (Professor D. L. Levantin, supervisor): "The Finishing and Fattening of Black Spotted Calves in Light Enclosures and on Feedlots"/

/Text/ In recent years specialized cattle feedlots have become widespread. With comparatively small capital outlays on construction they make it possible to expand the scale of fattening, to increase the weight of the cattle sold for meat and to increase labor productivity. However, as domestic and foreign experience shows, at the feedlots during finishing and fattening it is not possible to achieve the maximum productivity of animals. The analysis of the operation of large lots, such as the Bratskaya and Proletarskaya of Rostovskaya Oblast, as well as the feedlots of Orenburgskaya Oblast and others shows that, in spite of the high level of feeding, during the unfavorable months of the year with respect to weather conditions, during the autumn-winter and winter-spring periods the weight gain of the animals declines sharply, the consumption of fodders increases (N. V. Cherekayev, 1978; S. G. Leushin, G. I. Bel'kov, 1978). In this connection the need arose for the development of a more modern technology of fattening young cattle when they are housed at lots. This technology should combine the use of lots and enclosures. From May 1977 to May 1978 a scientific and economic experiment was conducted at the Voronovo Sovkhoz of Moscow Oblast in order to study the effectiveness of the new technological approach to the organization of the fattening of young stock. The goal of the experiment was to find the optimum combination of the periods of housing of young stock during finishing and fattening on a semi-enclosed lot and in enclosures of the light type and to establish the level of productiivity of young bulls when this technology is used.

For the experiment two groups of 40 young bulls each, which were raised for 93 days in enclosures, were selected by the method of analogs. During this time one head was fed: whole milk substitute--28 kg, mixed fodders--175 kg and haylage--480 kg. The total food value of the fodders was 350.5 fodder units.

Then the animals were raised and fattened according to the following plan: group I was housed in a light enclosure on grate floors, group II was housed on a lot of the semi-enclosed type with a three-wall shed. At the end of September, after 119 days in the enclosure, 20 bull calves from group I were transferred to a lot with a three-wall shed (group Ia), while 20 bull calves from group II were transferred from the lot to an enclosure (group IIa).

The temperature and moisture conditions in the enclosure and on the lot differed considerably by months of the year.

The rations of the animals of all the test groups during the summer consisted of green bulk of cereal and leguminous grass and mixed fodder of up to 43 percent, the rest of the time the young stock received mixed fodder of up to 65 percent in food value and haylage. The total consumption of fodders per animal during the entire period of the experiment was 2,611 fodder units for group I, the consumption of fodders was identical for the young stock of groups II and Ia—2,875 fodder units each. The animals, which were on the lot in the summer and were transferred in the autumn to the enclosure, consumed 2,526 fodder units. About 100 g of digestible protein were contained in 1 fodder unit.

The analysis of the development of the animals showed that at the end of the summer the difference in live weight between the young stock, which were housed on the lot and in the enclosure, was 18.4 kg, and the average daily weight gain on the lot was 155 g less than in the enclosure (Table 1).

The transfer of the young bulls of group IIa in the autumn from the lot to the enclosure promoted a sharp increase of the weight gain, which during the 175 days of the autumn-winter period was 943 g, or was 153 g higher than when housed on the lot. The animals, which were transferred to the lot from the enclosures (group Ia), reacted completely differently. Their average daily weight gain as compared with animals of the same age, which were in the enclosure, decreased by 132 g (15.5 percent). The weight gain among this group of young stock was especially low during the first months after the transfer to the lot, which indicates the important role of the careful preparation of the young stock for a change in housing conditions.

During the spring stay on the lot a compensation of the delay in growth was noted among the young stock of groups II and Ia: the average daily weight gain was more than 1,000 g, while in the enclosure among the young bulls of groups I and IIa the average daily weight gain was 620 and 786 g respectively. On the whole during the 361 days in all the groups the weight gain was quite similar and ranged from 847 g in group II to 878 g in group IIa a day.

The outlays of fodder per unit of production increased in connected with age and the housing conditions. Thus, whereas young bulls of group I in the summer consumed 5.9 quintals of fodder units for the production of a 1-quintal weight gain, during the autumn-winter season this indicator increased by 3.7 quintals of fodder units, or 60 percent. A similar increase in the outlays of fodders on weight gain was also noted among the animals of group II. However, in the former case this increase was connected with a slight decline of productivity, while in the latter case along with the decline in the vigor of growth it was connected with an increase of the consumption of fodder.

Table 1

Indicators of Productivity of Animals by Groups for the Experiment as a Whole and by Seasons of the Year

Season	Finishing and fattening (days)	Indicator	I	II	IIa	Ia
Summer	119	Average live weight on delivery for the experiment (kg)	135.9	136.2	--	--
		Average live weight at end of the season (kg)	254.3	235.9		
		Average daily weight gain (g)	995	840		
Autumn-winter	175	Average live weight at the end of the season (kg)	400.6	373.8	400.7	377.1
		Average daily weight gain (g)	835	790	943	703
Spring	67	Average live weight at end of the season (kg)	442.2	441.6	453.4	446.8
		Average daily weight gain (g)	620	1019	786	1040
Total	361	Total weight gain obtained (kg)	306.5	305.5	317.1	310.2
		Average daily weight gain during period of experiment (g)	850	847	878	859

Among the young stock, which were transferred in the autumn from the lot to the enclosure, the consumption of fodders was 8.2 quintals of fodder units per quintal of weight gain. The transfer of the young stock of group Ia from the enclosure to the lot caused a decrease of productivity and a higher consumption of fodders--12.2 fodder units per kg of weight gain, or twofold more than the summer consumption.

The housing of animals on the lot during the spring showed that among the young bulls a significant compensation for growth and the better use of fodders were noted--per quintal of weight gain the young stock of group Ia consumed 2.4 quintals of fodder units or 27 percent less than during the preceding period.

During the experiment as a whole the young bulls of groups IIa and I consumed less fodder per unit of production than did the animals of their age from groups II and Ia.

At the end of the experiment a control slaughter of the young bulls was carried out, the results of which are cited in Table 2.

Table 2

Indicators of the Meat Productivity of the Young Bulls of the Test Groups at the Age of 16 Months

Indicator	I	II	IIa	Ia
Preslaughter weight (kg).	428.9	428.4	439.8	433.4
Carcass weight (kg)	231.2	233.0	235.9	235.0
Weight of internal fat (kg)	12.3	3.5	15.8	7.7
Dressing percentage (percent) . . .	56.7	55.3	57.2	56.0
Content of bone in carcass (percent)	20.6	21.4	18.5	20.5
Chemical composition of carcass:				
protein.	19.9	19.8	19.8	20.2
fat.	13.0	9.4	16.6	10.1

Heavy carcasses, which were assigned to the first category, were obtained from the young stock of all the groups. They had pronounced fat marbling, the rating of which by groups was from 3.5 points in groups II and Ia to 4 points in groups I and IIa. The carcasses obtained from animals of groups IIa and I had the most uniform marbling. The carcasses were notable for good full meatiness, especially in group IIa, a greater formation of internal fat was also typical of them (2.5-fold more than among animals of groups II and Ia).

The economic results of the raising and fattening of young bulls in the different systems of housing were as follows. The production cost of a 1-quintal gain of body weight was by groups: I--95.21 rubles, II--99.16 rubles, IIa--92.97 rubles, Ia--93.49 rubles. The level of profitability of beef production was 112 percent in group I, 108 percent in group II, 116 percent in group IIa and 110 percent in group Ia.

Thus, the housing of young stock during the period of finishing and fattening in enclosures and on lots significantly influences the nature of the distribution of the weight gain by seasons of the year, the expenditures of fodders per unit of production, the intensity of the accumulation of fat in the meat and the economic indicators.

The combination of summer finishing on the lot with winter fattening in a light enclosure makes it possible, as against fattening on a lot, to achieve a live weight of 450 kg 15-16 days sooner and to decrease the outlays of fodders by 10 percent, including concentrates by up to 70 kg per head.

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LIVESTOCK

PROBLEMS IN FOOD WASTE COLLECTION FOR HOG FATTENING

Minsk ZVYAZDA in Belorussian 11 Mar 80 p 2

[Article by I. Turetskiy and I. Yurkevich under rubric "A Shock Front for Livestock Raising!": "Lost Feeds"]

> [Text] Let us begin with a simple truth which is known to one and all--the benefits to be gained from fattening hogs on food wastes. One ton of waste replaces 250 kilograms of grain and can yield up to 50 extra kilograms of meat. Last year, for example, nonplan feed procured in Minsk yielded more than 2,700 extra tons of high-quality pork.
>
> It must be added that reserves of waste in the city are unlimited. They are to be found in literally every home, in schools and preschool establishments, dining rooms and cafeterias, hospitals, enterprises involved in food production, and food stores. All it takes is to properly organize collection and deliver the food wastes promptly where they are needed--the livestock farms.

For the purpose, a special office has been set up in Minsk. We talked to Deputy Director B. V. Shulyakov about how the work is progressing and what problems and difficulties have arisen.

"If we go by average indicators," said Boris Vasil'yevich, "things seem to be pretty good. Overall plans last year were overfulfilled. But not all the units met their tasks. The Kommunarka, Minskpivprom, Minskkhlebprom, and other associations do not yet fully appreciate the importance of this matter."

Then we visited the dining facilities trust in Leninskiy Rayon, which was 86 tons short in food waste deliveries last year. And they are lagging considerably behind this year. According to Planning Division Chief S. U. Daneyka, a number of public food service outlets will continue to fall behind the plan: Our workload is too big, they complain. But is it?

Among the biggest laggards in the trust is the dining facility of the Machine-Tool Plant imeni Oktyabr'skaya Revolyutsii (which incidentally also has two other cafeterias). Last year they were 17 tons short in waste deliveries.

Administrator Zh. Gatovskaya revealed the reason for this big lag. It turns out that every day at least 110 kilograms are sent to the neighboring Kryshtal' Alcohol and Vodka Association to feed their watchdogs!

A. Safronov, head of the vodka plant's security, confirmed that for every 3.5 tons of food wastes they pay the dining facility nine rubles per month!

Well, that's pretty profitable for the neighbors, but rather disadvantageous for the trust, which has no way to make up for the lag.

We have cited just one example of extraordinary apathy toward a vital feed source. Many similar instances were found in the dining facilities of Zavodskiy, Sovetskiy, and Oktyabr'skiy rayons, where food waste collections are badly organized. Huge quantities are discarded and hauled to the dump.

It is necessary to dwell in more detail on the collection of food wastes in housing complexes. Both last year and this, undercollection in the city added up to many hundreds of tons. The reason is simple: Some people just don't like to "get their hands dirty."

Consider the following example. All winter, loaded cans of food waste stood in the courtyard of high-rise Building No 21 on Surganov Street, and no one bothered to haul them away. Chief Viktor Ivanovich Yemel'yanov of Housing Administration Office No 25 said in response to criticism, "We'll look into it!" So what do we find? There are no food waste cans in the stairwells of any of the five floors, so the residents have to throw it into garbage cans.

The same puzzling fact is discovered in Zavodskiy Rayon's Housing Administration Office No 56. Residents of nine-story Building No 41 on Gerasimenko Street complain that from December of last year to this day they have had to discard their food wastes in garbage cans. No package containers are placed on this building's floors.

And consider the situation of four boarding houses of the worsted wool combine, housing more than 2,000 persons.

Boarding House No 2 Chief M. Kunitskaya has this to say: "The cleaning women are taking all the food wastes home with them."

It is estimated that more than seven tons monthly are taken from two boarding houses on Solnechnaya Street alone, carried away in buckets and cans to feed privately-owned hogs. In the boarding house of the Textile School on Borodinskaya Street the wastes are thrown away in the garbage cans. And none of the school's administrators are concerned by the fact that 12 tons of wastes are hauled to the dump every year.

We have been discussing here the unsatisfactory state of affairs in the collection of nonplan feeds. The situation is even worse with respect to transporting the wastes to the stock farms. The main "clients" are the suburban sovkhozes Baravlyany and imeni Ul'yanov, which accommodate 26,000 hogs for fattening.

At present, all food wastes are hauled in these sovkhozes' vehicles. By the present schedule, the trucks drop by the food service establishments only two or three times a week, and not very regularly at that. The cafes, restaurants, and cafeterias keep sending complaint signals: 500 to 1,000 kilograms of collected wastes just sit there for days on end, spoiling and losing their nutritive value.

Similar facts are reported by Sovetskiy Rayon's Dining Facilities Trust Deputy Director M. Karagina, Frunzenskiy Trust's Trade Division Chief M. Mardvinenko, Main Cafeteria Administrator F. Klavsuts of Plant imeni Lenin, and many others. Cafeteria No 70 of the Refrigerator Plant hasn't seen a truck from Sovkhoz imeni Ul'yanov for two weeks.

Baravlyany Sovkhoz Dispatcher L. Karostsik states that she is constantly getting calls from the city asking them to pick up the food wastes more promptly, but there aren't enough trucks. There are six GAZ-51 trucks in service, but they keep breaking down.

What is the remedy for this situation? How to solve the acute transport problem?

Deputy Director A. Zhuravlev of Belzhivprom Trust, which has jurisdiction over both sovkhozes, has a reasonable idea. He thinks that city food waste collections should be concentrated under a single authority. This matter, adds Anatoliy Georgiyevich, has been raised repeatedly by the trusts and sovkhozes and various councils. Many letters have been written to the Minsk Gorispolkom. Yet the problem has yet to be resolved. It will have to be resolved immediately.

A. Zhuravlev's reasonable proposal is supported by Comrade Shulyakov, deputy director of the city's Office for the Collection of Nonplan Feed Wastes. He is in favor of organizing a truck column for this purpose within the specialized city sanitation motor pool, allocating for it an additional six to eight vehicles. For relatively little cost it would be possible to arrange for continous hauling of the many hundreds of tons of food wastes that accumulate daily in Minsk.

But until this is done, possibly in other variants, it is essential to beef up the truck transport capacity of both sovkhozes. It is wrong to place in jeopardy the efforts of thousands of people in different organizations and departments of the city involved with supplying the livestock farms with additional nonplan feed resources.

Now it's up to the Minsk Gorispolkom.

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PROBLEMS, OPPORTUNITIES IN USE OF FOOD WASTES FOR FEED

Minsk ZVYAZDA in Belorussian 23 Mar 80 p 1

[Article by V. Tarasevich under rubric "Livestock Wintering": "Wastes Into Profits"]

[Text] Our republic's food and meat-dairy industry has substantial reserves for adding to the feed balance of social livestock farming. Recent years have seen a big increase in the production of equipment for making combination feeds, including new kinds of raw materials. For example, who would have guessed that worthless poultry feathers could be used to make an excellent feed meal? Such a technology has been put into use in the Minsk Meat Combine. The efforts have paid off in full. The combination feeds industry is now getting a valuable and nutritious feed additive. It is worth while to pay serious attention to wastes and production by-products. Difficulties in providing livestock with feed, due to unfavorable weather conditions, are being reported in many rayons. In places where things have been taken effectively in hand, getting the maximum yield from each feed unit and making creative use of reserves, such complaints are fewer. Food industry wastes in Borisovskiy Rayon are being utilized much more efficiently now than before. The farms are enthusiastically making use of potato pulp, beer mash, and pasta and bakery plant wastes to fatten hogs.

A dairy plant and a meat combine there are located near each other. The farms which sell milk make regular use of skim milk and whey in accordance with set norms. The Borisov Dairy Plant has enough tanks to store the whey, but it is put immediately to work, sent to the hog farms on suburban kolkhozes and sovkhozes.

How about the situation in the meat combine? Several tons of waste are accumulated there every day, chiefly the contents of the rumens of cattle. In Borisovskiy and many other rayons such wastes are used chiefly for fertilizing.

Couldn't a more rational use be found?

To this question, specialists of the Administration of Agriculture of the Minskaya Oblispolkom and the Belorussian Ministry of Agriculture did not have a clear answer. Officials of the enterprises and the republic's Ministry of Meat and Dairy industry have also taken a passive position.

Meanwhile, some of the rayons have gained some interesting experience which should have been investigated and utilized long ago. For almost five years now Kolkhoz imeni Sil'nitskiy in Politskiy Rayon has been processing meat combine wastes to make livestock feed.

"The technology is very simple," says Kolkhoz chairman Ya. I. Kimstach. "About the same as in making grass meal. In a year's time we get about 400 tons of dry matter, each kilogram of which contains 0.4 to 0.5 feed units. It's easy to see the advantages of processing wastes, how much clover is saved."

There is another reserve for social hog raising in the republic's meat combines--broth from the cooking of by-products, ham, and sausages. These, again, are not being fully utilized. The main reason is lack of interest and apathy on the part of enterprise officials, also the lack of special containers. Again, consider the example of Politskiy Rayon. Every day the Turavlyanskiy Sovkhoz hauls 700 to 800 kilograms of broth away from the combine and uses it on the hog farms. How has this rayon managed to coordinate things so well between agriculture and industry, while other rayons lack this kind of contact? This is the question that should be put to officials of the republic's Agriculture and Meat and Dairy ministries.

It should be mentioned here that this year it has been decided to arrange for the production of feed additives and dry vegetable livestock feed in the republic's meat combines. Plans call for preparing reliable quantities of such feeds and making them available to the farms. But things are going to slowly. There are complaints of technology shortcomings and the lack of equipment.

The proper use of wastes requires the interaction of sectors of industry and agriculture. Only in this way can we achieve the desired effect. Unfortunately, even the suburban farms near Minsk are not making full use of available reserves. In January, Sovkhoz imeni Ul'yanov collected only 228.4 tons of whey from the city's dairy plant, versus a scheduled 620 tons; Baravlyany Sovkhoz also collected less than half the amount scheduled. Especially difficult conditions develop on weekends: containers become overloaded because of the lack of transport. Approximately the same thing is seen in the Minsk Dairy Combine. The lack of an organized schedule of waste haulage impairs rational use of them.

The republic's oblasts and the city of Minsk have set up operative offices for the procurement of nonplan feeds and food wastes. These autonomously-financed organizations are doing valuable and useful work. But for some reason, the Minskaya Oblispolkom has restricted the work of the office just to housing-communal operations and the public feed service system. Only small amounts of waste are coming in from the cafeterias and snack bars of schools and hospitals. Obviously, more contracts should be drawn up with food service enterprises and meat and dairy industry outfits for waste procurement. This would make it possible to exercise stricter control over the use of reserves to extend the food balance in social livestock farming. Another crucial problem is that of the equipment available to these offices. Because of the poor condition of automotive transport facilities in Minskaya Oblast, about 100 tons of waste are lost every year. The procurement workers are obliged to appeal to various organizations and facilities for truck repairs and to have truckbeds patched. It is puzzling why the Oblast Production Administration for Material-Technical Supply of Agriculture is standing aloof.

During the massive feed procurement season in the republic, effective and bold measures were found and taken to boost feed supplies. Now, when the wintering season is coming to its closing and most crucial period, we need energetic and purposeful efforts to make the fullest possible use of available reserves.

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LIVESTOCK FEED, PRODUCTIVITY PROBLEMS, PROSPECTS

Minsk ZVYAZDA in Belorussian 27 Mar 80 p 2

[Article by V. Shchurok, division chief, Main Administration of Livestock Raising, Belorussian Ministry of Agriculture, under rubric "ZVYAZDA's Commentary": "Livestock Farmers Put to the Test"]

[Text] There is no more important task for livestock farmers today than to complete the wintering season successfully, to carry out the missions of the final year of the five-year plan. The accomplishment of these tasks is considerably complicated by the fact that the farms are not supplied with enough feeds. This situation requires of each official, specialist, and farmer a high level of organization and labor discipline. It must be kept in mind that livestock productivity depends on more than a proper diet alone. Of no less importance is the maintainance of an optimal microclimate in the animals' quarters, a reliable water supply, removal of manure, and enrichment of diets with vitamins and minerals. As is well known, when animals' quarters are cold and damp it takes 20 to 25 percent more feed per unit of output than under the right conditions.

The main concern now is to make rational use of feeds, to dispense them thriftily. Feed should be given to the animals only in prepared form. Each kilogram of feed must be made to yield the maximum gain.

The course of stall maintainance in the republic in the first two months of this year attests to the fact that despite very difficult wintering conditions the kolkhoz and sovkhoz farm workers used all their efforts and skills to prevent livestock losses and obtain the maximum possible output. On many of the farms, the workers' intensive efforts paid off in good results. As of 1 March, for example, cattle losses on the republic's farms had been reduced by 1,500, hog losses by 21,400, and sheep losses by 1,200 compared with the same period last year.

Livestock plague declined in all oblasts. At the same time, during the same period calf production rose by three percent and lamb production stood at last year's levels. Milk herds increase by 29,000 head, or two percent.

But the low level of livestock feed provision had an adverse effect on productivity. Average milk yields per cow in the first two months stood at 267 kilograms, or 11 kilograms less than last year.

The decline in cow productivity has reduced gross milk output throughout the republic. A deficit has developed in all oblasts except Minskaya. The greatest deficits occurred in Vitebskaya and Mogilevskaya oblasts: milk output there was only 92 and 93 percent, respectively, of last year's.

In February alone, 83 rayons had reduced milk yields per cow. All rayons in Vitebskaya Oblast experienced declines, 16 rayons in Mogilevskaya, 14 in Gomelskaya, 13 in Brestskaya, and 12 in Grodnenskaya. The biggest deficits occurred in Uzdenskiy and Cherikovskiy rayons, where yields declined by 25 kilograms, and in Rogachevskiy, Dubrovenskiy, Lioznenskiy, Tolochinskiy, Berezovskiy, and Kobrinskiy rayons--20 kilograms.

How about milk procurement? In the first two months the state purchased 5,100 tons more than in the same period last year. Vitebskaya and Mogilevskaya oblasts, however, sent 3,600 and 600 tons less, respectively, to the reception points. Milk procurement is poorly organized in Dubrovenskiy, Lioznenskiy, Beshenkovichskiy, Krichevskiy, Ushachskiy, and Cherikovskiy rayons. They sold the state less than 90 percent of last year's amounts.

The agricultural administrations of these and other rayons which have allowed milk procurement to decline will have to take all the necessary steps to boost the productivity of the milk herds. Every effort must be made so that each farm meets targets of milk sales to the state in the first quarter.

More work must be done with respect to purchasing surplus milk from the population. This will make it possible to speed up the fulfillment of procurement plans. In the republic as a whole in the first two months, 11,400 tons more milk were purchased from the population than last year, but in Mogilevskaya, Vitebskaya, and Minskaya oblasts purchases were substantially lower than the average republic indicators. It is essential to immediately step up organizational and instructional work among rural inhabitants, and farm officials will have to help these efforts in every way. It is the duty of every farm worker to exert every effort to complete livestock output and procurement plans.

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REGIONAL DEVELOPMENT

REVIEW OF NEW GRAIN ELEVATOR CONSTRUCTION

Moscow EKONOMICHESKAYA GAZETA in Russian No 13, Mar 80 p 2

[Article: "How New Elevators are Built"]

[Text] With the current scale of grain production and procurement the fight against grain losses and its dependable preservation at all stages from the field to the consumer is one of the great resources for increasing the foodstuff reserves in the country and is one of the most important factors in the steadfast growth of the well-being of the Soviet people. The successful solution to this multi-plane goal is integrally related to the intensive development and overall strengthening of the technical base of procurement, to the building of modern grain-reception enterprises equipped with the most modern highly productive equipment, of large-capacity plants and shops to process grain.

The state annually allocates significant monetary and material resources, which grow from five-year plan to five-year plan for the development of the technical base for storing and processing grain. Suffice it to say that in 4 years of the current five-year plan about 3.5 billion rubles have been allocated for the building of elevators, mills, mixed-fodder plants and other structures.

The Pace has Grown, But...

Large building subdivisions of union ministries--Minsel'stroy [Ministry of rural construction], Minpromstroy [Ministry of industrial construction], Minstroy [Ministry of construction], Minenergo [Ministry of energy], Mintyazhstroy [Ministry of heavy industry construction] and some others--and many enterprises of the machine-building industry participate in the building of grain-reception enterprises. The Central Committee of the Komsomol has given great administrative aid to the building of grain-storage facilities by declaring many structures of the USSR Minzag [Ministry of Procurement] shock Komsomol structures.

As we see from the diagram being published, the pace of elevator construction was higher than during the Ninth Five-Year Plan. In the past 4 years of the

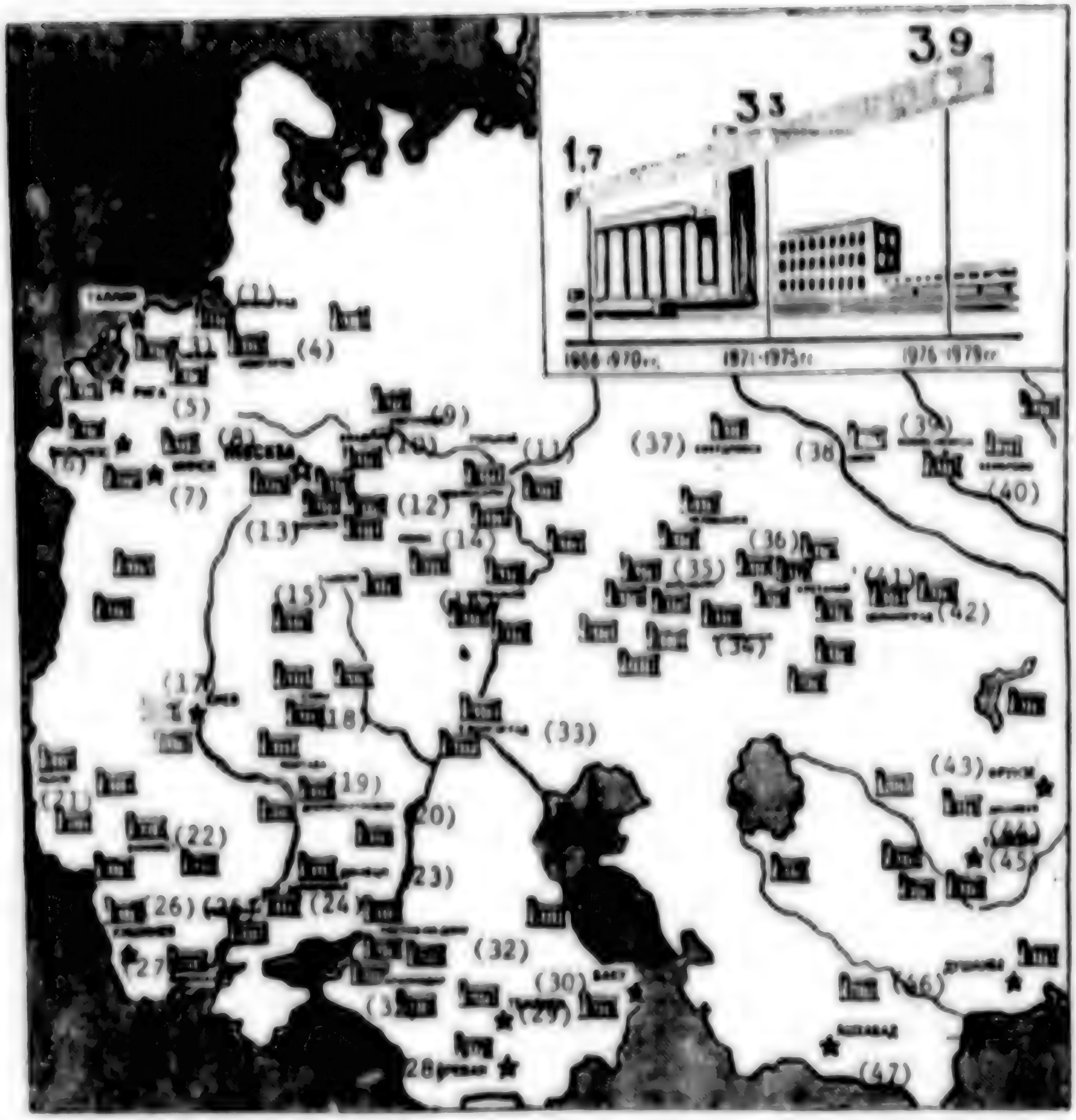
10th Five-Year Plan alone grain storage facilities with a capacity of about 18 million tons were put into operation, including over 15.6 million tons of capacity in elevators. This is almost equal to the total that was put into operation during the Ninth Five-Year Plan. The average annual introduction of elevator capacities has increased by over 600,000 tons. Sixty-four mixed-fodder plants with a capacity of over 27,000 tons per day and 16 large milling enterprises were built and put into operation.

Last year state grain capacities were supplemented by new powerful elevators built at the stations of Davydovka in Voronezhskaya Oblast, Sakmarskaya in Orenburgskaya, Petukhovo in Kurganskaya Oblast, Ol'ginskaya and Beloglinskaya in Krasnodarskiy Kray, in the cities of Zaraysk in Moscow Oblast, Tselina in Rostovskaya Oblast, Naberezhnyye Chelny in Tatarskaya ASSR, at the stations of Mayna in Ul'yanovskaya Oblast, Novoaydar in Voroshilovgradskaya Oblast, Predgornaya in Vostochno-Kazakhstanskaya Oblast and in many other rayons producing commodity grain.

The collective of builders of the Yuzhelevatorstroy [Southern elevator construction trust] (director D. Rozin) of Minsel'stroy of the Ukrainian SSR worked in an organized manner. It built and submitted the elevators at the stations Varvarovka in Nikolayevskaya and Oktyabr'skaya in Krymskaya oblasts ahead of schedule. The elevator at the station Meleuz of Bashkirskaya ASSR was put into operation earlier than expected by the trust Uralelevatorstory [Ural elevator construction trust] of the RSFSR Minsel'stroy. The elevators at the stations Prosyanaya of Dnepropetrovskaya Oblast (association Dneprosel'stroy [Dnepr agricultural construction association], director V. Velichko) and Guty in Khar'khovskaya Oblast (trust Ukrelevatormel'stroy [Ukrainian elevator and mill construction trust], director V. Sobolev) were put into operation on schedule. The storage facilities of mechanized grain storehouses have increased noticeably.

At a number of building sites a stable businesslike cooperation has developed between the collectives of builders and installation workers, who deal well with the established tasks and eliminate shortcomings directly on location while remaining in close contact with the directors of grain-reception and grain-processing enterprises and with workers of planning institutes. Here as a rule there are staffs available for making operational decisions about problems, socialist competition has begun among collectives and constant controls have been established over the fulfillment of each stage in the work schedule. Local party and soviet organs are attentively watching to make sure that building sites are supplied with technological equipment on schedule and they are giving practical help in mobilizing material and personnel resources.

This kind of experience of skilful management and building organization of elevators, flour-milling and mixed-fodder plants has been amassed in the Ukraine, in Moldavia and in some oblasts of the RSFSR, Belorussia, Kazakhstan and Uzbekistan.



A map of elevators under construction that should be put into operation during 1980. The diagram shows the introduction into operation of elevator capacities according to five-year plans (on the average per year, millions of tons).

Key on following page.

Key to map on preceding page:

1. Leningrad
2. Tallin
3. Pskov
4. Novgorod
5. Riga
6. Vil'nyus
7. Minsk
8. Moscow
9. Kostroma
10. Vladimir
11. Gor'kiy
12. Cheboksary
13. Zaraysk
14. Penza
15. Tambov
16. Kuybyshev
17. Kiev
18. Sumy
19. Poltava
20. Dnepropetrovsk
21. L'vov
22. Vinnitsa
23. Donetsk
24. Zaporozh'ye
25. Nikolayev
26. Kishinev
27. Odessa
28. Yerevan
29. Tbilisi
30. Baku
31. Krasnodar
32. Rostov-na-Donu
33. Volgograd
34. Aktyubinsk
35. Orenburg
36. Chelyabinsk
37. Sverdlovsk
38. Omsk
39. Novosibirsk
40. Kemerovo
41. Kustanay
42. Tselinograd
43. Frunze
44. Dzhambul
45. Tashkent
46. Dushanbe
47. Ashkhabad

Unfortunately, this experience still has not been widely applied. From this comes the annual underfulfillment of plans for putting procurement structures into operation, their low building readiness, and the constant violations of normative schedules for putting enterprises into operation.

During the years of the 10th Five-Year Plan about 1 million tons of elevator capacities, milling capacities for processing 4,000 tons of grain per day and mixed-fodder plants with a daily capacity of over 10,000 tons were not put into operation on schedule. The milling combine in the city of Nakhichevani has been in the process of being built for over 13 years by Trust Number 5 of Minpromstroy of the Azerbaydzhan SSR. Builders of the Sevanstroy Trust of the Minpromstroy of the Armenian SSR have been building the milling combine in the city of Sevan since 1969. The elevators at the stations of Novosergiyevskaya in Orenburgskaya, of Bashmakovo in Penzenskaya and of Dzhalagash in Kzyl-Ordinskaya oblasts should have been put into operation in 1978. However, the building of these facilities by the building subdivisions of the USSR Minsel'stroy has still not been completed today.

Minsel'stroy organizations, which do over half of the total volume of work to build enterprises for USSR Minzag, were able to fulfill last year's plan in only 34 of the planned 128 facilities. The builders of USSR Minstroy fulfilled plans for only five of 22 planned facilities. Minpromstroy fulfilled plans on six structures out of 15.

The Price of Imperfection

During the years of the current five-year plan it has been possible to achieve somewhat of an improvement in the quality of building as a result of the mutual efforts of builders and clients and of the increased mutual demandingness on some structures. However, a radical improvement in this matter has not yet been reached. Violations of building norms and regulations and divergences from plans are still tolerated on the construction sites of elevators, mills and mixed-fodder plants.

Thus, the organizations of Glavelevatorspetsstroy [Main administration of elevator and special construction] of RSFSR Minsel'stroy have been producing elevators with great imperfections at the stations of Yekaterinovka, Bobrovka and Balashov of Saratovskaya Oblast. Defects were tolerated by the workers of the trust Ukrelevatormel'stroy [Ukrainian elevator and mill construction trust] of Minsel'stroy of the Ukrainian SSR while laying the foundation for the silage building of the elevator in Ivano-Frankovsk. A great deal of time and many resources have been spent to eliminate these defects. The building organizations of USSR Minstroy tolerated defects while laying foundation slabs for the building of a ferroconcrete storehouse for raw materials of a mixed-fodder plant in the city of Daugavpils of the Latvian SSR and for the building of an elevator in the city of Dzhuma in the Uzbek SSR.

However, it would be unjustified to blame only the subsidiary building organizations for this. To a certain degree the client service and the subdivisions of USSR Minzag are to blame for the non-fulfillment of plans and for the low quality of facilities for procurement enterprises because in some places they have exercised poor controls over the building of structures. Individual workers of the administration of grain products have demonstrated mismanagement in accepting structures for operation while they are grossly incomplete. This results in lags in the assimilation of new enterprises. This is the situation at the mill in the city of Kokande which was put into operation in September of 1971. For 5 years it has not been possible to assimilate the mill capacities in Dzhambay and Spitak.

Violations and errors in the planning of capital investments, in the designing of structures, in supplying structures with technological equipment and in assimilating new capacities have had a negative effect on the course and building schedule of structures. As a result there is a growth in the number of incomplete structures.

The institutes of Glavpromzernoproyekt [Main administration of planning for the grain industry] are still poor in their supervision of the quality of building and other work included in design documentation. There are still cases of the practice of introducing changes and corrections into designs. This results in added expenses for building and in a non-adherance to the schedule for the operational start of the structure. The construction of mills is behind schedule in Novokuznetsk of Kemerovskaya Oblast, in Bratsk of Irkutskaya Oblast and in Shamkhale of Dagestanskaya ASSR because of the untimely issuance of corrected documentation.

The Goals of 1980

For several years now there has been a serious problem with the delivery of equipment and cables for operational structures. These frequently arrive at the wrong time and in incomplete sets. The unloading of many types of equipment necessary for an operational start of the structure during the first 6 months of the year has been planned for the third and fourth quarters. In 1979 the delivery of 1,200 equipment items and over 60 kilometers of cables was very late and this held back building-installation work on large operational structures, resulting in a violation of the schedule for their operational start. The plants of Minlegpishchemash [Ministry of Machine Building for Light and Food Industry and Household Appliances]--the main supplier of equipment for Minzag structures--alone last year did not deliver nine sets of grain-drying units, 105 conveyors, 537 norias, 252 separators, 129 grain-cleaning machines and some other equipment. Sometimes this occurs because of the untimely issuance of order specifications and because of frequent corrections of technical documentation and replacement of equipment planned by the design. For these reasons last year 16 operational structures did not receive equipment on schedule.

For this reason all organizations that are directly or indirectly involved in the building of procurement enterprises have the task of precisely fulfilling their contractual agreements and of improving the quality of work performed. This task is especially urgent this year. This is not only the final year of the 10th Five-Year Plan but also a responsible period in preparing for work during the 11th Five-Year Plan. This year contractual building organizations and workers of procurement organs must complete a very intensive program. Considering the structures that were not put into operation last year it will be necessary to build and put into operation elevators with a total capacity of almost 4 million tons, 16 mills and over 20 mixed-fodder plants.

The map indicates the larger elevators that must be put into operation in 1980. The number of new structures is being curtailed with the aim of focusing attention on operational structures. Fixed resources and material resources are being concentrated on operational and large, leading structures.

During the current five-year plan the experiment of storing grain resources in metal silos, which was conducted in various climactic zones of the country, came to an end. Observations demonstrated their high degree of dependability. The building of such storehouses is less expensive. Less time and manpower is required for building them. The necessary production base is now being developed for the building of metal capacities. In Minsk a plant for rolled designs and structural members for metal silos has been built and is already in production. The all-union association Elevatorstroy [Elevator construction association] is forming special building-installation organizations which will construct new elevator capacities for existing grain-reception and grain-processing enterprises. In addition to this there has been a study of the experience of building elevator capacities using the method of uninterrupted winding of sheet metal into cylinders of various diameters.

At the present time there is one goal for all procurement organizations--to successfully prepare for grain harvesting during the final year of the 10th Five-Year Plan. In order to meet this goal it is essential to ready the material-technical base of existing granaries and to secure the quality fulfillmnnt of plans on the building of new enterprises. To build quickly, economically, using a modern foundation--these are today's requirements which must become the irrevocable precepts of all organizations which are responsible for constructing grain storehouses.

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CSO: 1824

REGIONAL DEVELOPMENT

GRAIN ELEVATOR CONSTRUCTION IN RSFSR

Moscow SEL'SKAYA ZHIZN' in Russian 19 Mar 80 p 2

[Article by A. Kosyakov, senior engineer of the Sevkavelevatorstroy [Northern Caucasus Elevator Construction Association]; P. Malevanov, director of the trust Uralelevatorstroy [Ural Elevator Construction Trust]; and A. Gorbunov, director of the trust Sevzapelevatorstroy [Northwestern Elevator Construction Trust]: "Modern Storage Facilities for Grain"]

[Text] The collectives of organizations and enterprises of the RSFSR Ministry of Rural Building and of the RSFSR Ministry of Procurement have taken on great responsibilities for this year regarding the accelerated development of capacities for storing and processing grain. In particular, it has been decided to put into operation elevators with a total capacity of 1,720,000 tons, or 118,000 tons more than indicated in the plan and mixed-fodder plants producing 3,230 tons of products per day as compared with the planned 2,230 tons. SEL'SKAYA ZHIZN' correspondents asked the directors of some elevator-construction organizations to tell us how work is proceeding to fulfill these obligations, and what is being done to introduce the largest number of new capacities in time for this year's harvest.

At an Operational-Start Pace

[A. Kosyakov] The collective of our trust, Sevkavelevatorstroy, knows well its responsibility in developing the base for the reception, storage and processing of seed in the rayons of the Northern Caucasus. This year we must build elevators with a capacity of 262,800 tons. These new facilities are located in the elevators of Tarasovskiy, Belaya Kalitva, Don-25 Poultry Complex in Rostovskaya Oblast and in the stannitsas of Ol'ginskaya and Slavyansk-na-Kubane in Dagestanskaya ASSR.

Here special attention is focused on improving the organization of labor, on raising its productivity and on strengthening labor discipline. All work is done in two shifts. For installation work there is a three-shift schedule.

Each operational structure has a complex engineering plan that enables workers to achieve a uniform pace in building. In order to deal with the intensive program at the operational structure workers have been recruited from the Armavirskiy and Stavropol'skiy construction convoy, from the Sal'skaya and Tikhoretskaya mobile columns and from other subdivisions.

Effective measures have been taken to ensure that the Nal'chinskiy and Tikhoretskiy plans of ferroconcrete articles, which are our subsidiaries, as well as the Batayskiy Repair-Mechanical Plant fulfills all orders for the operational structures on a priority basis.

At the Don-25 Poultry Complex the elevator facilities are being constructed by the meritorious builder of the RSFSR V. Marchenko from the Batayskiy SP-42. This collective has already completed work valued at hundreds of thousands of rubles above the plan. The brigade of G. Mitlinov of the Millerovskiy PMK-600 is building the elevator in the settlement of Tarasovskiy precisely on schedule.

The trust recruits subcontracting organizations in order to fulfill the work. Unfortunately, not all subcontractors understand their duty correctly. Thus, the organizations of the USSR Ministry of Transportation Construction annually accept work for no more than 100,000 rubles of the total 400,000-900,000 rubles' worth offered by the trust and this of course slows work down. The client also should take a more interested position by concerning himself with the scheduled delivery of equipment to operational structures in good time and by raising the quality of technical documentation.

To Keep Our Word

[P. Malevanov] Our trust's collective last year submitted 10 structures for the storage and processing of grain with a total capacity of 295,800 tons for operational starts. In particular, the construction of large elevators in the city of Tobol'sk of Tyumenskaya Oblast and Petukhov of Kurganskaya Oblast was completed.

This year we must put new capacities into operation for grain storage at the stations of Yemanzhelinskaya of Chelyabinskaya Oblast, of Golyshmanovo of Tyumenskaya Oblast and of Makushino of Kurganskaya Oblast, as well as in Nizhniy Tagil, Shadrinsk and Kurgan. In addition, we must put a large mixed-fodder plant in Troitsk, Chelyabinskaya Oblast, into operation.

In the recently-published obligations it was planned that equipment for operational structures of this year would be delivered no later than 3 months prior to their operational starts. At the present time the situation is still an alarming one. According to the data we have, a significant amount of equipment has been earmarked for the fourth quarter. Here timely interferance is required.

Planning questions have not been given a final solution in the building of a mixed-fodder plant. The institute Sredazpromzernoproyekt [Central Asian Industrial Grain Planning Institute] did not issue composite estimates and as a result builders in some places have been forced to work "blindly."

The collective is also concerned about the creation of necessary surplus for subsequent years. In connection with this the unsatisfactory planning of elevator building in the Urals and in the Transurals is very alarming. We feel it is unjustified that the volume of such work in our zone has dropped from 17.5 million rubles in 1976 to 10.5 million rubles in 1980. Having completed the building of elevators in Petukhov, Irbit, Magnitogorsk, Miass and Lebyazh'yem, the trust last year alone lost about 400 highly trained workers-elevator builders who turned out to be out of the running. Our clients do not have the planning-budget documentation for building in subsequent years. We feel that the RSFSR Ministry of Procurement should especially examine this question and take immediate measures to provide the elevator builders of the Urals with a stable work front.

Demand and Responsibility

[G. Gorbunov] The collectives of our trust have taken on great obligations this year. The trust administers work in nine oblasts of the RSFSR's Northwest. In each of these oblasts elevator builders have pledged to significantly overfulfill their tasks. Suffice it to say that it has been decided to complete one of the largest structures--a mixed fodder plant in the settlement of Volosov of Leningrad Oblast--14 months earlier than usual.

The calculations of the builders are being supported by their deeds. It is true that things are still moving behind schedule on structures in Kalininskaya, Kostromskaya and Smolenskaya oblasts. We are taking measures to correct the situation here. We are trying not to disperse the work force and technology and to concentrate them at the most important sites. We are striving to more actively introduce progressive forms of work organization.

Special attention must be given to strengthening brigade cost accounting. Of the 27 brigades in the various production subdivisions of the trust over half work by contract. They have taken on the obligation of equipping each structure assigned to them on the building site from the zero cycle to the operational cycle. Consequently, the effectiveness of the work of each brigade will be determined by the final results. We have enlarged complex brigades which manage the building of 2-3 structures at once. This enables them to maneuver the work force and technology better.

A no less important role in the fight to fulfill obligations is played by the ties with plants and suppliers of materials and equipment. We are seeking direct contacts with everyone. The trust dispatcher secures the well-defined delivery of building materials, skipping intermediate bases and crossing points.

Undoubtedly, the work that is before us is intensive. It requires a feeling of responsibility from and an exactingness toward every builder. Only in this way will it be possible to successfully achieve our goals.

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CSO: 1824

TILLING AND CROPPING TECHNOLOGY

SPRING CROP CARE ADVICE

Kiev SIL'S'KI VISTI in Ukrainian 2 Apr 80 p 1

/Article by V. Remeslo, director, Myronivs'kyy Scientific Research Institute of Selection and Wheat Seed Growing, hero of Socialist Labor, academician; V. Sayko, deputy director for scientific work, candidate of agricultural sciences on: "Spring Care for Winter Crops"/

/Text/ This article will discuss certain features of spring winter crop care with special consideration of the state of crops this spring.

An analysis of meteorological data shows that winter wheat plant growth and development begins during late spring vegetation renewal. Because individual areas were not adequately provided with moisture last fall this crop entered winter insufficiently developed and also because an ice crust covered part of the sown area for a long time this winter, each field must first of all be thoroughly inspected. This is needed to determine accurately the extent or type of damage or winter crop loss at the time of spring vegetation renewal, and to decide on correct measures which would provide for the planned gross grain harvest.

Winter crop care must be based on the specific crop state and on the agro-ecological conditions of its development. The concern here is for its topdressing.

Normally developed crops, especially on areas which were insufficiently fertilized in the fall, should be top dressed during the vegetation renewal period early in the spring with nitrogen fertilizers, 30 kg activated substance per hectare. It is desirable to apply them again with disk seed drills or by the root method using the same amount of fertilizer.

Methods of application
Myronivs'kyy Scientific Research Institute of Selection and Wheat Seed Growing has determined that on the average during the last three years the harvest increase of "Illichivka" after peas for seed without basic fertilizing amounted to 6.4 quintals following the application of 30 kg activated nitrogen per hectare early in the spring by the surface method. After application of the same nitrogen dose with disk seed drills or by the root method the yield was 9.4 quintals. When these nitrogen doses were applied early in the spring by the surface method, and the second time plants were fertilized by the root method, grain harvest increase reached 13 quintals per hectare.

Well-developed crops should be top dressed only by the root method, with a fertilizer dose of 30 kg of nitrogen per hectare. When seed drills cannot be used to apply them, aircraft use is more effective over these crops, but only after the completion of spring tillering, at the beginning of plant stem elongation (when the first stem node may be felt).

Thinned and insufficiently developed crops which must be improved need not be top dressed early in the spring. These crops should be sown or resown with barley at a suitable time with simultaneous row full mineral fertilizer application. Research conducted at our institute showed that thinned winter wheat "Illichivka" sown over with barley "El'hina" variety (sowing norm - 3.5 million sprouting seeds per hectare) provides for a harvest increase of 10.5 quintals per hectare. Because bald patches will appear over some areas (resulting from a prolonged ice crust) more seed drills should be reconstructed as was done by the Cherkasskaya and Kievskaya Oblast farm workers. With the help of this equipment crops can be top dressed with fertilizers, turning on grain sowing mechanisms over damaged areas.

Very thinned, insufficiently developed crops should be resown with spring crops at appropriate times with adherence to agro-technological rules.

Next, use of phosphorus potash fertilizers and their methods of application will be discussed. Research at our institute has shown that their effectiveness in spring use is considerably lower than in the fall, prior to sowing. In fact, on areas after peas sown for seed, surface application of 30 kg activated phosphorus and the same dose of potash early in the spring yielded a harvest increase of only 1.9 quintals per hectare, the root method disk seed drill application yielded 3.8 quintals.

Early spring application of phosphorus-potash fertilizer under winter wheat sown after corn for silage did not provide a noticeable harvest increase. Since a considerably higher effect can be obtained from nitrogen fertilizers alone during late spring vegetation renewal, it is more convenient to utilize present phosphorus and potassium reserves under other grain crops.

Our institute research indicated that in the beginning period of winter wheat development a moderate nitrogen feeding is essential, and an adequate feeding is needed in the late phases of vegetation when it aids the maximal development of plant productivity elements. In 1977, application of nitrogen fertilizer in the plant stem elongation and heading phases (after peas for seed) provided for a harvest of "Illichivka" winter wheat of 82.9 quintals per hectare. The increase amounted to 22.6 quintals. Protein content increased by 3.38 percent, and its harvest per hectare by 4 quintals. Gluten content equalled 32.9 percent, and in some variants reached 38 percent. In 1978, the harvest after peas for seed amounted to 78.5, and after corn for silage 71.7 quintals per hectare. The increase equalled correspondingly 14 and 21.3 quintals.

It is typical that in last year's droughty conditions nitrogen fertilizers applied during the late phases of winter wheat vegetation were not any less effective than those applied prior to sowing. Harvest increase in both cases was equal. In Odesskaya Oblast conditions, according to data from the All-Union Selection-Genetic Institute, nitrogen application during the plant stem elongation and heading phase in the "Prybiy" and "Odesska-51" varieties (after clean fallow) was much more effective than the prior to sowing application. This data is confirmed by production review on the elite institute farm, and in the republic's many kolkhozes and sovkhozes. For example, in the Kagarlitskyy Rayon, Kievskaya Oblast, nitrogen application in 1978 over an area of 3,800 hectares in the stem elongation and heading phase provided for a marked grain harvest increase. Nitrogen fertilizers (30-40 kg activated substance per hectare)in this method of top dressing should be applied at the end of the spring tillering stage with seed drills, that is by the root method, and a second time (50-60 kg per hectare) from an aircraft at the beginning of heading.

An important element in winter crop care is the battle with weeds. Chemical weeding is very effective. The best time for the application of the herbicide group 2,4-D is the spring tillering period. The norm for applying amine salt 2,4-D is 0.6 - 0.8 kg activated substance per hectare. For sodium salt and esters it will be 1.1-1.5 and 0.4-0.5 kg. The crops should be worked at a temperature of at least 12 degrees warmth.

The weeds die off completely when mixtures of herbicides are used: 0.5 kg amine salt 2,4-D and 0.2-0.5 chlorcrotyl ester 2,4-D, or a mixture of ester with amine salt 2,4-D. If daytime temperatures are higher than 16 degrees only amine salt 2,4-D can be used.

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CSO: 1811

TILLING AND CROPPING TECHNOLOGY

MEASURES FOR SPRING FIELD WORK EXPLAINED

Kiev SIL'S'KI VISTI in Ukrainian 1 Apr 80 p 2

[Advise of Ukr SSR Ministry of Agriculture, Southern Section VASKhNIL on: "Timely and Skillful Conduct of Spring Field Work"]

[Text] The republic's farmers are working hard to fulfill this year's socialist commitments in grain production and its sale to the state, markedly improve the feed basis, and provide for speedy livestock-raising development. Spring sowing technology is in a better state than last year. Kolkhozes and sovkhozes are fully supplied with high-quality sowing material.

What is unusual this year is that corn, sunflowers, soybeans and several other crops will be raised according to new technology over a considerable area. Getting ready for it, farms are completing technology preparation, are bringing in mineral fertilizer, herbicides and are making the necessary adjustments. Specialists and machine operators were instructed everywhere on the cultivation of the above mentioned crops in a different manner.

Success in spring field work will depend to a large extent on the creative approach of specialists, machine operators and rural workers towards its fulfillment with specific weather conditions this year in mind.

Cool weather, snow covering over a marked area of the republic's territory and deeply frozen soil require a delay in sowing, especially in the southern oblasts. Sowing dates for early and late varieties are, therefore, close together, which will cause a lot of pressure in conducting field work.

Data collected over many years show that a rapid temperature rise is possible when spring is delayed. This will complicate the winter crop growth after plant vegetation renewal, weakened during wintering, and can also lead to marked moisture losses.

In some oblasts winter crops wintered in conditions of prolonged ice crust formation over part of the area, marked air temperature fluctuations and temperature drops to a critical level for poorly developed crops.

Therefore, particular attention must be paid to our most important grains-winter crops. "SIL'S'KI VISTI" (dated 2 Feb 1980) already wrote about the care they need in the winter-spring period. Managers and specialists must now, in addition to that advice which was published, fulfill a series of additional organization-agrotechnological measures.

Providing nutrients for winter crops, differentiated top dressing according to the crop condition and within specific dates are of particular importance. Aircraft should be utilized more effectively for this purpose and appropriate above ground methods of fertilizer application. Heavy technology, tractors and RUM type fertilizer spreaders should not be used on weakened crops because they can damage them.

To lengthen the top dressing period, root top dressing should be used widely, which allows for the enfolding of fertilizer in soil to a depth of 3-5 cm. At the beginning of winter crop vegetation renewal, the condition of the crop must be carefully inspected on all farms so that fields to be reseeded or overseeded may be determined early. A basic indicator for the plant's ability to live is its newly formed root system. During inspection, crop pest infestation, or crowding with weeds should also be noted. Inspection results determine additional measures, directed first of all towards faster rooting and growth of the above ground winter crop mass, and also obtaining a larger qauntity of grain of strong and valuable wheat.

Special attention should be paid to the condition of crops which were under an ice crust for a long time. Overseeding and reseeding must be done within specific dates making sure of the correct sowing norm and the depth of seed covering. Seed drills equipped with special shovels are used for overseeding.

Considering that during late spring, as a rule, there is less intensive development of the vegetative mass and this leads to weed crowding, crops should be treated with herbicides.

Winter crop harrowing should also be approached creatively, differentially, taking into account conditions of crops and soil. This agricultural measure should be accomplished in the best possible time, when the soil is easily loosened with selected, proper equipment.

An important prerequisite for obtaining high yields of spring grain crops is the maximal retaining and effective use of moisture, decreasing the time needed for the fulfillment of the whole complex of field work with adherence to agrotechnological requirements. Technological operations and wide-sweep aggregates should be combined more frequently to prevent moisture loss.

Work tempo should never be increased at the cost of lowering the quality During soil working, fields should be carefully leveled, the fertilizer must be well covered with a firm seed bed covered at the proper depth. On each farm sowing must be done with adherence to the optimal sowing norm, avoiding crowding and especially thinning.

Beet growers also have a lot of work. To obtain timely and even shoots of sugar beets during a rapid air temperature rise, special attention must be paid to their sowing dates. This year it should be done at the same time as early grain crops and within maximally brief dates, 4-5 days. A basic indicator in determining optimal sowing dates is the soil's physical readiness permitting the accomplishment of this measure after presowing area tilling. It should be remembered: a delay in sowing beets can lead to uneven, thinned shoots, decreasing plant density, lowering the yield and root sugar content.

When industrial progressive technologies are widely applied in raising corn, sunflowers and other crops, it is very important to level the fields, permitting quality sowing and effective herbicide use. With this in mind, farms should be equipped with a sufficient number of land levellers and soil smoothing equipment.

Last year when industrial technology was used in growing corn, some farms allocated the crop improperly after predecessors, soil levelling and herbicide application was inadequate, prescribed seed sowing norms were not adhered to. These shortcomings cannot be repeated this year.

To obtain abundant, guaranteed harvests of corn seed and other crops on areas where progressive technology will be applied, it is essential to sow recommended hybrids and varieties, providing for correct plant density.

It is importnnt to use chemically-treated seed for sowing all spring crops. We must remember that adherence to seed chemical treatment technology provides for an additional 5 to 10 percent harvest.

Everything must be done for a sharp harvest increase and an increase in the gross yield of buckwheat and millet. To achieve this, first of all the needed sowing area must be provided as well as a high level of agrotechnology.and

A large reserve in grain and other agricultural production is the correct utilization of reclaimed lands. All irrigated areas should be equipped with brigades, teams and detachments. The need for earlier watering cannot be excluded this year, which calls for preparation of watering technology and finding members for the teams.

Feed crops require the continuous attention of farm managers and specialists. To provide an early feed harvest, all kolkhozes and sovkhozes must sow mixtures of grain-pulse grasses early, the soil under perennial grasses must be loosened and top dressed with mineral fertilizer; if possible, a watering should be done too. All feed crops are handled by brigades, teams and detachments equipped with suitable technology.

The spring period must be fully utilized also for increasing feed production on natural agricultural lands through surface improvement, top dressing with organic fertilizer, manure; thinned grass stands should definitely be overseeded.

Experience shows that almost every year in both early and late spring the soil warms unevenly. Therefore, each farm must watch the conditions on its fields in order to begin the work selectively. It must be remembered that the success of spring field work is not determined by days but by hours.

This spring it is especially important to provide for correct work organization, making use of highly-productive technology. Aggregate work must be arranged so that they could work not only in the daytime but also at night. The group method should be used widely to complete specific operations, complex detachments for soil working and fertilizer application should be organized. Rural workers are bound by honor to conduct high-quality spring field work within specific dates.

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END

SELECTIVE LIST OF JPRS SERIAL REPORTS

USSR SERIAL REPORTS (GENERAL)

USSR REPORT: Agriculture
USSR REPORT: Economic Affairs
USSR REPORT: Construction and Equipment
USSR REPORT: Military Affairs
USSR REPORT: Political and Sociological Affairs
USSR REPORT: Energy
USSR REPORT: International Economic Relations
USSR REPORT: Consumer Goods and Domestic Trade
USSR REPORT: Human Resources
USSR REPORT: Transportation
USSR REPORT: Translations from KOMMUNIST*
USSR REPORT: PROBLEMS OF THE FAR EAST*
USSR REPORT: SOCIOLOGICAL STUDIES*
USSR REPORT: USA: ECONOMICS, POLITICS, IDEOLOGY*

USSR SERIAL REPORTS (SCIENTIFIC AND TECHNICAL)

USSR REPORT: Life Sciences: Biomedical and Behavioral Sciences
USSR REPORT: Life Sciences: Effects of Nonionizing Electromagnetic Radiation
USSR REPORT: Life Sciences: Agrotechnology and Food Resources
USSR REPORT: Chemistry
USSR REPORT: Cybernetics, Computers and Automation Technology
USSR REPORT: Electronics and Electrical Engineering
USSR REPORT: Engineering and Equipment
USSR REPORT: Earth Sciences
USSR REPORT: Space
USSR REPORT: Materials Science and Metallurgy
USSR REPORT: Physics and Mathematics
USSR REPORT: SPACE BIOLOGY AND AEROSPACE MEDICINE*

WORLDWIDE SERIAL REPORTS

WORLDWIDE REPORT: Environmental Quality
WORLDWIDE REPORT: Epidemiology
WORLDWIDE REPORT: Law of the Sea
WORLDWIDE REPORT: Nuclear Development and Proliferation
WORLDWIDE REPORT: Telecommunications Policy, Research and Development

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